REPORT ON:

REGIONAL SCAN SUMMARY
Environmental Farm Planning Program
AGRICULTURAL POLICY FRAMEWORK
British Columbia

Submitted to:

BC Ministry of Agriculture, Food and Fisheries
1767 Angus Campbell Road
Abbotsford, B.C., V3G 2M3
Canada

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March 31, 2003

022-5120

EXECUTIVE SUMMARY

The new Agriculture Policy Framework program includes a significant component for Environmental Farm Planning. The program requires that issues and risks be identified and prioritized on a regional basis within British Columbia

To facilitate the identification and prioritization of issues and risks a series of seven workshops were held with representatives from agricultural producer groups, and local, provincial and federal agencies at various locations throughout the province.

Each of the workshops was conducted with the objective of assessing actual and potential environmental risks and priorities within that region. These assessment are to be used in guiding the implementation of Beneficial Management Practices (BMPs) and targeting financial resources to priority risks and issues.

Risks and issues were discussed under the categories of water quality, water quantity, soil, air and biodiversity.

Water Quality

Riparian function, pathogens, nutrients and sedimentation were rated as high or moderate priority issues for all regions. Pesticide management was often given a high or moderate priority, and somewhat less frequently, management of petroleum products. Woodwaste management was identified as an issue only in the Fraser Valley.

Water Quantity

The availability of water and water conservation were issues identified and given a high priority in all regions. Competing uses for water tended to be an issue given an high priority in the more densely populated areas and stormwater management in areas where there is more significant urban development with agriculture tending to be more concentrated in lowland areas (Fraser Valley and Vancouver Island). Water allocation was a commonly identified issue, particularly with respect to livestock watering.

Soil

Streambank and field erosion were the issues most often given a high priority, followed by soil structure and soil organic matter. Soil potassium, drainage and organic soil management were identified as high priority issues in the Fraser Valley and Vancouver Island. Pesticide accumulation was ranked as a moderate priority issue in the Fraser Valley and Okanagan Regions.

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Air

Smoke, from burning land clearing debris and prunings, was the most commonly discussed issue under the air category. Spray drift and particulates were high priority issues in the Okanagan and greenhouse gases a high priority issue in the Fraser Valley and a moderate priority issue on Vancouver Island. Odour and ammonia were identified as a high priority issue only in the Fraser Valley.

Biodiversity

Riparian function and wildlife damage were identified as high or moderate priority issues at all workshops. Weeds were a high priority issue for all regions except the Fraser Valley. Management of grassland habitat was rated as a high priority in the Thompson and Kootenay Regions and as a moderate priority in the Peace and Cariboo. The need for biodiversity planning (determining biodiverstiy objectives) was identified in most regions. Species at risk was rated as a moderate priority issue. Drainage system maintenance was a high priority issue in the Fraser Valley and Vancouver Island Regions. Pesticides were identified a high priority issue only in the Okanagan.

In addition to the discussion of issues and appropriate BMPs there were several comments of a more general nature concerning environmental farm planning:

- target both large and small farms,
- be proactive rather than reactive,
- collect baseline information and monitor both the results of BMPs implementation and the various program components,
- increase the awareness by the public of the contributions which agriculture makes, in particular the contributions to habitat and biodiversity,
- recognize and publicize good farm practices,
- provide assistance for education, awareness, communication, extension, technology transfer,
- utilize partnerships in resolving issues,
- provide financial incentives (funding assistance, tax incentives) to help agriculture implement BMPs with the understanding that this is not a subsidy to agriculture but a contribution from society to assist agriculture in providing environmental benefits to all of society,
- recognize the need for the economic sustainability of agriculture (there were several comments that farmers a specie at risk); do not create excessive regulatory burden, assist with transition and succession issues, assist with renewal in agriculture (farmers are getting older), and
- ensure that the impacts of other industries and recreational users are addressed.

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Acronyms

ALC Agricultural Land Commission

ALR Agricultural Land Reserve

APF Agricultural Policy Framework

BCAC British Columbia Agriculture Council

BMP Beneficial Management Practice

DFO Department of Fisheries and Oceans

EFP Environmental Farm Plan or Environmental Farm Planning

GHG Greenhouse Gas

IPM Integrated Pest Management

OM Organic Matter

ROW Right of Way

SAR Species at Risk

SIR Sterile Insect Release

1.0 INTRODUCTION

The B.C. Ministry of Agriculture, Food and Fisheries retained Golder Associates Ltd. (Golder) to facilitate seven regional workshops for the purpose of identifying issues related to agriculture and their impact on the environment and identifying farm and ranch management practices needed to address these issues.

This report provides summaries of the proceedings of each workshop and of the issues and risks, ranked by priority, and associated BMPs, identified for each region.

1.1 Background

The new Agriculture Policy Framework program includes a significant component for Environmental Farm Planning. The program requires that issues and risks be identified and prioritized within the province on a regional basis.

1.2 Objective of Workshops

Each of the workshops was conducted with the objective of assessing actual and potential environmental risks and priorities within that region. These assessments are to be used in guiding the implementation of Beneficial Management Practices (BMPs) and targeting financial resources to priority risks and issues.

1.3 Workshop Locations and Invitations

To facilitate the scan of agriculture and environment issues related to the environmental farm planning program, Golder conducted seven (7) workshops with representatives from agricultural producer groups, and local, provincial and federal agencies. Workshops were held at the locations shown in Table 1. Agricultural regions are shown in Figure 1.

Table 1
Locations and Dates of Workshops.

Region	Location	Date
Fraser Valley	Abbotsford	January 27, 2003
Cariboo/Skeena	Prince George	January 29, 2003
Peace / Northeast	Dawson Creek	January 30, 2003
Thompson	Kamloops	February 3, 2003
Okanagan	Summerland	February 4, 2003
Vancouver Island	Nanaimo	February 6, 2003
Kootenays	Cranbrook	February 10, 2003

Prior to these regional workshops, a provincial workshop was held in Abbotsford on December 10, 2002. Participants at that workshop included representatives from the BC Ministry of Agriculture, Food and Fisheries and Agriculture and Agri-Food Canada.

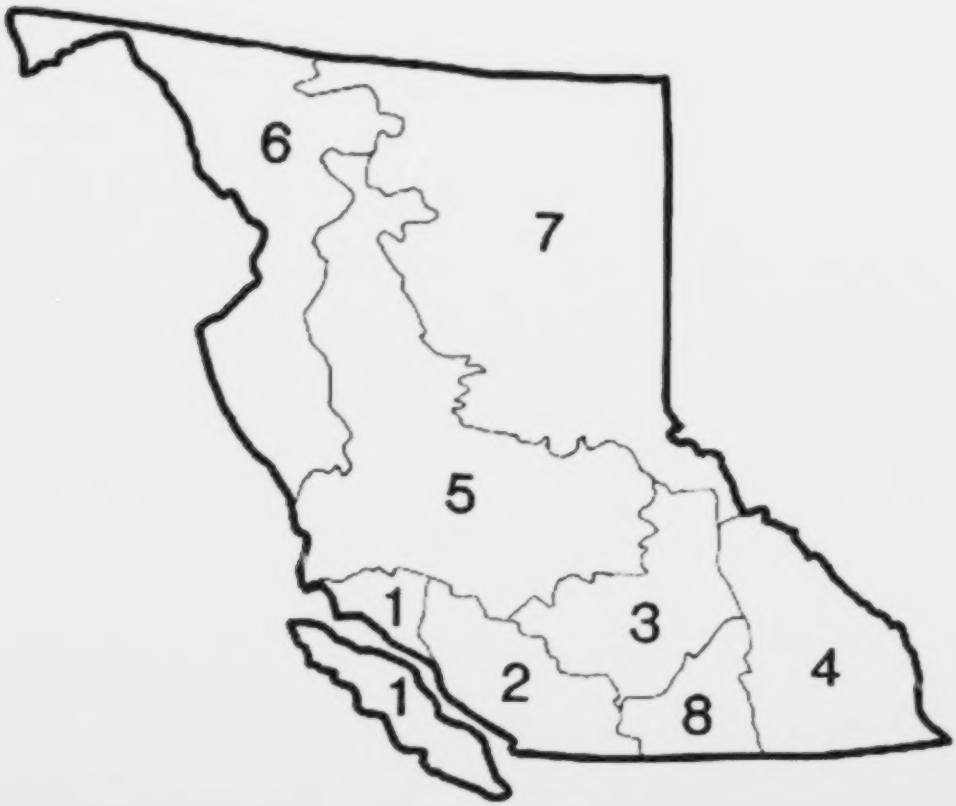

Figure 1.
Agricultural Regions of British Columbia (MAFF, 2000).

1	Vancouver Island	5	Cariboo
2	Fraser Valley	6	Skeena
3	Thompson	7	Peace / Northeast
4	Kootenays	8	Okanagan

From MAFF, 2000

The BCMAFF provided workshop venues and was responsible for workshop invitations.

1.4 Workshop Format

Each of the regional workshops followed a similar format (a sample Agenda and the slides used during the workshop are contained in Appendix I).

Workshops opened with a brief introduction to the APF and EFP programs, environmental farm planning objectives, workshop objectives and outcomes, and workshop format (slides 1 to 8), and introductions of workshop participants and their affiliation.

The introduction was followed by a session on regional issues and risks, with issues and risks addressed under the categories of soil, water quality, water quantity, air and biodiversity. For each category the objective and key priorities were introduced (in the case of soil, slide 9) and followed by issue and risk identification by workshop participants. At the end of each category discussion, the higher priority issues which had been identified at the provincial (December 10, 2002) workshop were reviewed (slide 10 for soil) to ensure that these issues were included in the discussion.

Following a break the participants were asked, using the issues identified for each category in the earlier session as a guide, to discuss BMPs suitable for issue resolution or risk reduction, both those currently in use and potential new BMPs, and to discuss constraints to issue resolution. After each category discussion BMPs which had been identified at the December 10, 2002 provincial workshop were reviewed (slides 19 and 20 for the soil category).

At the conclusion of five of the workshops the participants were asked to vote on the importance of each of the groups of BMPs which had been identified during the latter part of the workshop. The participants were asked to cast a vote for a BMP package if they considered that the package would address an important regional issue, and to not vote for a package if they considered the package to be of little value in addressing an identified risk, that the risk being addressed was not a regional priority or that the BMP package was already widely implemented. Participants were asked not to evaluate whether or not the package should receive funding assistance through a program.

For the most part participants did not vote for an issue and associated BMPs if they considered the issue was not an agricultural responsibility.

Several participants were concerned that if they did not identify a BMP package as a priority, because the risk being addressed was localized and not common in the region the resulting lower priority might preclude funding assistance. The common response from

those participants who are involved in the EFP process was that such an outcome would be very unlikely.

Participants at the Abbotsford and Prince George workshops were not asked to vote on the groups of BMPs. Priorities for issues and risks identified at these workshops were assigned, after reviewing workshop minutes, by the workshop facilitators.

There were several questions concerning distribution and results of individual plans. Would the plans be available to bankers, insurance companies, consumers/processors? Would the process result in recognition or certification which might have marketing value? Participants familiar with the EFP process responded that each report would be confidential and that individual producers would decide who would have access to the plan developed for their operations.

2.0 SUMMARY OF IDENTIFIED ISSUES AND BENEFICIAL MANAGEMENT PRACTICES

2.1 Workshop Attendance and Minutes

BCMAFF staff were responsible for invitations to the workshops. Complete attendance lists for each workshop appear in Appendix II. Attendance by affiliation is summarized in Table 2 below. Minutes of each workshop are presented in Appendix III.

Table 2
Summary of Workshop Attendance by Participant's Affiliation

Participant Affiliation		Vancouver Island	Fraser Valley	Thompson	Kootenays	Prince George/ Cariboo	Peace	Okanagan
Producers								
	beef			1	13	3	1	
	berries	1	3					
	bison			1			1	
	dairy	3	3			1	1	
	forage			1		1	2	
	ginseng			2				
	grain						1	
	grapes							3
	greenhouse		1					
	hogs		2					
	horses		1					
	horticulture	1						
	organic					1		
	poultry	1	2					
	sheep	1	2	1		1	1	
	tree fruit							4
	vegetables		1					
	Farm Associations	9		1	4	5	1	1
Provincial Agency								
	Land and Water BC						1	
	Sustainable Resource Management			2	1			
	Agriculture, Food and Fisheries	4	3	5	3	3	2	3
	Water, Land and Air Protection		1	2	5	3	1	3
	Health			1	4			

Regions							
Federal Agency							
	Agriculture and Agri-Food		1	1		2	5
	Environment Canada		2		1		
	Fisheries & Oceans		4	1	4		
	Health Canada						1
Participant Affiliation		**Vancouver Island**	**Fraser Valley**	**Thompson**	**Kootenays**	**Prince George/ Cariboo**	**Peace**	**Okanagan**
First Nations						1		
Municipality / Regional District				2	1	2	3	2
NGO			4	2	1	2	1	
Consultant		1	2	3	1	1	1	3
Total Attendance		**21**	**32**	**26**	**34**	**29**	**19**	**25**

2.2 Workshop Summaries

The following sections summarize the issues, risks and BMPs identified at each of the regional workshops. The issues are listed in decreasing order of priority, with priority noted by bullets:

- high priority (received "votes" from 60% or more of workshop participants),
- moderate priority (votes from 30 to 60% of the participants), and
- low priority (votes from less than 30% of the participants).

Indented bullets in the following sections note more specific aspects of the issue or risk, applicable BMPs or constraints; they do not note any priority.

3.0 ABBOTSFORD

3.1 Water Quality (Abbotsford)

- **riparian areas**
  - buffer strips
    - compensation for land lost to buffers
  - streambank stabilization
  - improved management of upland / urban runoff
- **nutrient management**
  - nutrient management planning
  - "whole farm" nutrient management planning
  - improved nutrient applications (timing, methods)
  - assessment of subsurface drains as contaminant pathway
  - **manure management**
    - improved manure collection and storage
    - assess need for more manure storage
    - formulate feed rations to reduce nutrients in manure
    - programs for users of manure (not just producers of manure)
    - alternative uses for manure (other than land application)
      - biomass cogeneration, research funding
      - on-farm composting
      - appropriate siting of livestock facilities
    - other farm wastes
- **quality of water for food safety**
  - protect groundwater quality
  - monitoring water quality
- **pesticide management**

  - IPM (integrated pest management)
  - annual sprayer calibration
- **runoff management**
  - soil cover
  - buffer strips
    - compensation for land lost to buffers
  - fencing and off stream watering, controlled access by livestock
  - streambank stabilization
  - waterfowl management
  - improved management of upland / urban runoff
- **use of woodwaste**
  - education on problems with use of hog fuel
  - demonstration sites for alternatives to hog fuel
- **improved working relationship** with Fisheries (DFO)

3.2 Water Quantity (Abbotsford)

- **availability** of water for agriculture
  - promote water **conservation** (for everyone, not just agriculture)
  - improve water use efficiencies
  - improve water conveyance
  - improve irrigation scheduling
  - financial incentive for improved efficiencies
  - recycle water
- **competing uses** for water
  - secure water source for agriculture
  - identify current and future needs for agriculture, quantify actual use
- urban **stormwater management**
- **groundwater recharge**

3.3 Soil (Abbotsford)

- **improved drainage**
  - practical drainage maintenance procedures
- **flood control**
  - land filling in floodplains
- improved water management to reduce **subsidence of organic soils**
- **soil and wind erosion** due to lack of cover
  - permanent cover on highly erodable soils
  - grassed waterways
  - wind breaks

- improved irrigation practices
- conservation tillage
- cover crops
- reduce summerfallow
- crop rotations
- support Abbotsford Soil Conservation Association programs

- **soil structure management** (aeration, organic matter, reduce compaction)
  - better management of farm traffic
    - use of geotextiles
  - soil amendments to increase organic matter
    - recognize potential contamination concerns with wastes such as biosolids
    - promote use of manure, better for the soil than fertilizers
- **replace soil lost** on turf farms, nurseries
  - land leveling practices
- nutrient management for **potassium**
- address **soil acidity** issues
- more funding for **research** on soils issues
  - research / evaluation of soil testing techniques, interpretation
  - research on long term impacts of phosphorus
- proper **storage** of soils during soil handling (gravel pits etc)
- long term **monitoring** of soil
  - monitor accumulation of pesticides in soil

3.4 Air (Abbotsford)

- **ammonia**
  - better information on role of ammonia
  - improved management to reduce ammonia emissions
- **odour**
  - proactive odour control
  - timing of activities which may impact air quality (i.e. pesticide, manure applications)
  - intercommodity interaction and awareness
- **GHG**
  - store energy when burning to generate carbon dioxide for greenhouses
  - partnerships for methane production
  - better information on agriculture's role in GHG (carbon sequestering vs. emissions)

3.5 Biodiversity (Abbotsford)

- **riparian area** management
  - buffer strips
    - compensation for land lost to buffers
  - fencing and off stream watering, controlled access by livestock
  - streambank stabilization
  - improved management of upland / urban runoff
- **drainage system maintenance**
  - ditch maintenance procedures, watercourse classification
  - ditches have become habitat
  - control of reed canary grass
- control of dangerous or **nuisance wildlife**
  - lure crops for wildlife
  - waterfowl management
  - wildlife corridors
- **rural urban interface**, encroachment of urban land use
  - urban land use forcing wildlife to agricultural land
  - size of homes in agricultural areas
  - better land use planning (urban encroachment, residential land use within agricultural areas)
- **biodiversity planning**
  - research to determine priorities
  - agriculture provides habitat
    - agroforestry
  - partnerships with conservation groups
  - integrate other topics with biodiversity
- **pesticide impacts** on wildlife

3.6 Other (Abbotsford)

- include small / hobby farms in process
- readily available consultant to answer questions
- recognition for good on-farm practices
- do not create excessive regulatory burden
- increase awareness of agriculture and it's contributions
- farmers are a species at risk

4.0 PRINCE GEORGE

4.1 Water Quality (Prince George)

- **riparian area management**
  - riparian plantings
  - rehabilitation and restoration
  - riparian pastures
  - water temperature
    - riparian shading
- **pathogens and nutrients**
  - livestock management
    - manage location and density
      - rotational grazing
      - maintain healthy vegetation
    - control access to surface water
    - off stream watering
    - manage overwintering sites
  - control silage effluent
  - manure management
    - on-farm composting
- **sediment** control (especially during spring runoff)
  - settling ponds
  - silt fences
- release of **phosphorus** during land clearing
- **pesticides** (local concerns, not a regional problem)
- **waste management**
  - old land fills, on farm dumps
  - underground fuel storage tanks
- **mortality** disposal
  - alternatives needed, especially during the winter

4.2 Water Quantity (Prince George)

- **access to water**, timing or low flows
  - watershed planning
  - community water systems
  - small systems for livestock, large for irrigation
- **water management**
  - holistic on-farm water management
- manage **beaver** activity

4.3 Soil (Prince George)

- **streambank erosion**
  - setbacks from watercourses
  - fencing to control cattle
  - access road stabilization and drainage
    - culverts, ditches, prevent concentration of water
  - stabilize high traffic areas
  - drainage management
  - floodplain management
    - pathways for larger floods
    - guidance for land management in floodplains
    - store water for later irrigation
- **field erosion**
  - ground cover
    - maintain vegetation
    - strip cropping on slopes
    - cover crops
  - grazing practices
    - timing
    - animal densities
- **soil organic matter**
  - tillage practices to maintain soil organic matter
- **organic soils**
  - information on control and management of water for organic soils
- **soil contamination**
  - proper management of petroleum products
- **soil compaction**
  - siting of livestock activities; move sites around, spread manure, limit soil disturbance
- **fertility management**
  - nutrient management for productivity (fertilizers and manure)

4.4 Air (Prince George)

- **smoke**
  - burning management
    - better information
    - locally valid burning index
    - review burning regulations
- **industrial impacts** on agriculture

    - airshed planning
- **odours** from intensive livestock operations

4.5 Biodiversity (Prince George)

- **riparian function**
    - riparian area management, not just streambanks
    - proper screening on water intakes
    - grazing / livestock management
- **weeds** (especially along railways and other ROWs)
    - weed management coordination and funding
- **crop damage** (elk, bears, deer)
    - predator management process
        - controlled access for hunting
- **species at risk** (coho, bull trout, sturgeon)
- **grasslands**
    - forest encroachment
        - grassland management; burning, partners in management
- **biodiversity planning**
    - protection of critical habitat, purchase or long-term lease of sensitive areas
    - financial incentives for habitat; buy back, habitat covenants
    - protect and restore wetlands
    - means, knowledge and coordination to address specific fish issues (intakes, ditches, etc.)
        - fish friendly infrastructure
- **pesticide** impacts on wildlife, birds, soil ecosystems
- **mortality** disposal (especially during the winter)
    - mortalities to trappers

4.6 Other (Prince George)

- focus on both large and small farms
- education
- education / cooperation / dialogue
- technical extension
- partnerships (inter-agency and inter-organization)

5.0 DAWSON CREEK

5.1 Soil (Dawson Creek)

- **soil erosion**
  - tillage management; conservation, minimum, zero tillage
  - conversions to more sustainable cropping patterns
  - shelterbelts
- **soil fertility**
  - nutrient management
- **streambank erosion**
  - buffer strips, vegetated buffers, riparian plantings
  - grassed waterways
  - reduce impacts by other industries (oil and gas, recreation)
- **pesticides**
  - education on pesticide use
  - IPM strategies
- **soil organic matter**
  - crop residue management
  - cropping and grazing management
- **soil contamination** by oil and gas industry
  - soil reclamation by oil an gas industry
- **soil compaction**
  - soil management practices
  - BMPs for oil and gas industry, recreation
- **pathogens** in soil

5.2 Water Quantity (Dawson Creek)

- **riparian function**
  - control of livestock access to streams (dugouts, fencing, waterers)
  - riparian buffers
  - streambank erosion (turbidity and sedimentation)
    - grassed waterways, stabilized banks and slopes on waterways
- **nutrients and pathogens**
  - grazing management
    - rotational grazing
  - overwintering site management
    - rotation of overwintering and feeding areas
  - nutrient management
    - nutrient applications (timing, planning, precision application)

- **petroleum products** and chemicals
  - oil / fuel disposal facilities, recycling opportunities
  - on-farm storage facilities
- **pesticides**
  - chemical applications (timing, nozzles, calibration, tank)
- **industrial impacts** on quality of water used by agriculture

5.3 Water Quality (Dawson Creek)

- **water supply**
  - integrated watershed plans
  - groundwater baseline information
  - water conservation
  - address legislative constraints

5.4 Air (Dawson Creek)

- **dust**
  - shelterbelts

- **GHG**
  - fertilizer management to reduce GHG emissions
  - increase organic matter to sequester carbon
- **burning**
  - locally appropriate burning index
  - alternatives (baling, raking)
  - burning may be an alternative to pesticide use
- **odours**
  - incorporation
  - feed additives
- impacts from **industrial activities**

5.5 Biodiversity (Dawson Creek)

- **weeds**
  - long term noxious weed control program
  - industry awareness of native plant use
  - revegetation with good quality seed
  - control transmission vectors (industrial, recreational)
- **wildlife damage**

- species population baselines
- review of hunting regulations
- manage wildlife populations (biodiversity strategy)
- lure wildlife away from crops (lure crops, waterfowl feeding stations)
- stackyard fencing (Regional District has developed a tool chest of BMPs)
- air cannons for bird control

- **riparian function**
  - buffers, riparian vegetation
  - control cattle access
  - fish friendly infrastructure
  - enhance biodiversity on agricultural land
- **habitat management (grassland)**
  - grazing management
  - winter range for ungulates
  - compensate agriculture for benefits provided to biodiversity
  - high level plans for land and water management
  - land acquisition for biodiversity
    - corridors
    - wetlands
    - address acquisition impacts to agriculture
  - native plant species used for revegetation
  - wetland restoration
  - partnerships
- **species at risk**
  - management for species at risk
  - information on species at risk
- disease transmission between domestic and wild animals

5.6 Other (Dawson Creek)

- public awareness of positive contributions made by agriculture
- local government focus to BMPs

6.0 KAMLOOPS

6.1 Water Quality (Kamloops)

- **riparian function**
  - grazing and pasture management, fencing sensitive areas
  - off stream watering, control livestock access
  - watercourse maintenance guide

- restoration of riparian areas
- maintain healthy uplands
- vegetation for shading
- intake construction, maintenance

- **pathogens and nutrients**
  - livestock husbandry (overwintering, calving areas)
  - manure management
    - manure applications (timing, location)
    - manure storage
    - hormones
- **pesticides**
  - IPM
  - chemical applications (rates, buffers, nozzles, calibration)
  - choice of chemicals
- **sedimentation**
  - maintain roads, stability and vegetative cover
- **well siting**
- **phosphorus**

6.2 Water Quantity (Kamloops)

- **water conservation**, improved efficiency of use
- **water allocation**
  - governance / Water Act review
  - offstream livestock watering
- **water availability** (surface and groundwater)
  - reservoir management
    - assistance for maintenance
  - instream flow needs
  - groundwater extraction
  - increased storage
  - flood control

6.3 Soil (Kamloops)

- **streambank and soil erosion**
  - riparian buffers
  - control erosion in annual cropping systems
  - forest practices (crown and private land), road design, vegetation, agro-forestry
  - streambank stabilization
    - bioengineering techniques

- control erosion from clearcuts
- grazing management
  - use of riparian pastures
  - maintain / rehabilitate plant communities

- **soil management**
  - rehabilitation vegetation
  - reduce compaction
  - soil (topsoil) conservation
  - soil organic matter
    - biosolids

6.4 Air (Kamloops)

- **burning**
  - chipping / recycling of woodwaste to reduce burning
- **GHG**
  - soil carbon sequestration / carbon management
- **odour**
  - manure applications; timing, buffers
  - composting management
  - biosolids incorporation, timing

6.5 Biodiversity (Kamloops)

- **noxious weeds**
  - integrated strategy for weed control
    - IPM, biological control, chemical control
    - use of native species
    - education
- **grassland habitat**
  - grazing management
  - control forest encroachment
  - improved availability of native seeds
  - conversions to cropped land
- **riparian function**, habitat management
  - riparian area restoration, rehabilitation
  - control livestock access
  - inventory of on-farm aquatic and terrestrial resources providing special habitat
  - awareness of biodiversity objectives
  - wetlands, protection and restoration
  - wildlife corridors

  - stream channel modifications
- **species at risk**
  - pest management and pesticides
- **wildlife damage**
  - predator control, education
- **land use planning**, conservation agreements, estate planning
- interactions between **domestic and wild animals**
- **woodlot** management

6.6 Other (Kamloops)

- extension, technical resources
- baseline information, program monitoring
- knowledge base of BMPs, research needs
- agricultural contributions to habitat and biodiversity

7.0 SUMMERLAND

7.1 Water Quality (Summerland)

- **riparian function**
  - maintain, rehabilitate, plant
  - reduce / control livestock access
  - vegetated buffers, setbacks
- **pesticides and petroleum products**
  - contaminant management; fuel & pesticide storage
  - buffers, setbacks to manage drift
  - better sprayer use (operation and technology)
- **nutrients and pathogens**
  - manure management
  - nutrient management; method, timing, rate
  - manure and compost storage
- **sedimentation**
  - reduce / control livestock access
- **water quality monitoring**
  - monitoring, baseline data; water quality; on-going
- **groundwater quality**
  - nutrient management
  - abandoned wells
  - well head protection program

7.2 Water Quantity (Summerland)

- **water conservation**
  - irrigation management, scheduling, types of systems
  - water conservation; extension, research, education
  - mulching
- **water availability**
  - water source maintenance and operation (reservoirs)
  - inventory of water availability and need; water balances
  - capture and storage of freshet water
- **competition for water**
  - landscape water use plans
  - water governance / policy
  - land use planning

7.3 Soil (Summerland)

- **soil organic matter**
  - mulch prunings, use as soil amendment (organic matter)
  - incorporate organic matter when planting (orchards)
  - surface application of composted materials
- **soil erosion**
  - dryland inter-row cropping, erosion control, organic matter additions
  - tillage management, no till, minimum till, timing
  - appropriate water management (irrigation and drainage)
  - livestock management
  - cropping practices; rotation, cover crop, high density
  - windbreaks
- **soil fertility**
  - nutrient & soil amendment management; timing, rates
  - choice of fertilizer types
    - soil acidification
  - selenium deficiency
- **pesticide accumulation**
  - IPM, SIR, organic farming practices
- **streambank erosion**
  - stream bank stabilization, drainage works
  - road construction practices

7.4 Air (Summerland)

- **burning**
  - mulch or chip prunings
  - assistance with stump disposal
- **spray drift**
  - spray drift: buffer, windbreaks; technology, application, calibration
- **particulates**
  - particulates: covercrop management; tillage management; maintain vegetation
- **GHG**
  - research on GHG issues
- **odours**
  - manure management: location, timing of applications
  - livestock intensity; siting, zoning

7.5 Biodiversity (Summerland)

- **riparian function and habitat management**
  - habitat set-asides
  - habitat enhancement
  - protect wetlands
  - maintain and enhance riparian areas
- **pesticides**
  - IPM; host plants for beneficial insects
- **biodiversity objectives and planning**
  - landscape plans; water, biodiversity, weeds
    - make use of available inventory information
  - partnerships
  - conservation management planning
  - extension, education, technology transfer
  - habitat and species inventories, research positive agricultural impacts
    - on-farm inventories
  - alternative crops; cropping diversity
  - tax incentives, financial assistance
  - conversion of agricultural lands to small parcel, urban
- **weeds**
  - noxious weed control program
  - weed inventory to design control program
    - wild fruit trees
- **wildlife**
  - species at risk

- invasive species
- crop losses
  - fencing
  - predator bird habitat
- wild / domestic animal management
- wildlife corridors
- light pollution

- **grassland management**
  - forest ingrowth
  - forest fires, fire control
- **mortality disposal**

7.6 Other (Summerland)

- education, technology transfer, extension, research

8.0 NANAIMO

8.1 Soil (Nanaimo)

- **soil organic matter**
  - soil amendments
    - compost, biosolids and residuals, redistribution of manure
- **manure management**
  - timing, rates, methods, storage
  - nutrient management
  - soil potassium and nitrate levels
- **drainage**
  - access for ditching, drainage
  - water management; high water table for organic soils
- **soil structure**
  - tillage; subsoiling, timing of activity, cropping
  - cultivation; minimum till, curtain drainage, grassed waterways
  - crop rotations
- **soil erosion**
  - bird control, scare, kill netting
  - cropping; strip/contour, beds, winter cover
  - grazing management
- **streambank erosion**
  - livestock management; rotational grazing
  - streambank planting, bank stabilization, structures, bioengineering
  - appropriate buffers, setbacks

- **soil loss due to harvest**
- **impact of septic systems**

8.2 Water Quality (Nanaimo)

- **riparian function and aquatic habitat**
  - farm input to stream classification; scientifically defensible setbacks
  - vegetated buffers
  - integrated stewardship, in stream structures to increase dissolved oxygen
  - fencing, off stream livestock watering, licencing issues
  - role of wetlands in water treatment
  - low dissolved oxygen, high temperatures
- **sedimentation**
  - ditch maintenance, sediment traps
  - cover crops, grassed waterways, vegetated buffers / hedgerows
  - hard crossing, bridges
  - drainage
  - woodlot management, on farm
  - carrying capacity of pasture, grazing areas
- **nutrients and pathogens**
  - manure management
    - manure storage, covered
    - agricultural waste, compost management
    - carrying capacity of land
- **pesticides**
  - pesticides / IPM
  - availability of appropriate products
  - financial incentives to use better products
- **mortality disposal**
  - carcasses; composting, incineration, rendering, financial assistance
- **well head protection**
- lack of information on **groundwater recharge** areas
- **septic systems**

8.3 Water Quantity (Nanaimo)

- **availability of water**, secure supply for agriculture
  - water storage capacity
    - obtaining licence, cost of works
  - conservation of water
  - water supply sharing

  - privatization of water supplies
  - water allocation issues, licencing
- **ability to manage water resource**
  - ditch maintenance
  - definition of habitat
  - property boundaries
  - regulations
- **competition for water**
  - farm input to land development planning, land use planning in recharge areas
- **stormwater management**

8.4 Air (Nanaimo)

- **burning**
  - burning management; cover, timing, rules; cost of stump grinders, chipping
  - locally valid venting index
- **GHG**
  - use of green fuel
  - localization of agriculture
  - manure handling; methane, additives (zeolite)
  - carbon sequestration by increasing soil organic matter, quantify impacts +/-
  - on farm alternative energy
- **odours**
  - composting management
  - regulations on composting non-farm wastes, compost for use on other farms
  - information on management options

8.5 Biodiversity (Nanaimo)

- **biodiversity planning**
  - extension, education; biodiversity awareness, +/- impacts
  - funding, tax incentives for protection, enhancement
  - money from partnerships for conservation, farmland trusts
  - integrated approach
  - buffers and land use planning
- **weeds**
  - support noxious weed program
- **wildlife damage**
  - wildlife management (fencing, netting, scare, hunting, compensation
- **riparian function and aquatic habitat**
  - farm input to stream classification; scientifically defensible setbacks

  - cover crops, grassed waterways, vegetated buffers / hedgerows
  - hard crossing, bridges
  - integrated stewardship, in stream structures to increase dissolved oxygen
  - off stream livestock watering, fencing
  - low dissolved oxygen, high temperatures
- **ability to manage water**, drainage systems
- **species at risk**
- **GMO management**

8.6 Other (Nanaimo)

- education, awareness, communication
- tax incentives, financial assistance
- extension, education, technology transfer
- targeted education - hobby farms
- increased awareness by public of agriculture
- single strong voice for agriculture
- single regulatory agency for all agricultural issues
- need for agricultural renewal / succession

9.0 CRANBROOK

9.1 Soil (Cranbrook)

- streambank erosion
  - maintain riparian function / vegetation buffers, riparian pastures
  - stream rehabilitation, bank stabilization
  - livestock watering, exclusion / fencing
  - road / access closures; limit access to back country
  - limited livestock access
  - awareness of access damage; education / extension
  - changes in flow regimes
- **field erosion**
  - soil handling practices; road maintenance, timing; gravel pits etc
  - grazing management, pasture management
- **soil structure**
  - soil management
  - compaction; road and trails
- **soil organic matter**
  - biosolids suitability research
- **drainage**

- seasonal ditching

9.2 Water Quality (Cranbrook)

- **pathogens**
  - livestock and manure management
    - livestock overwintering, siting, availability of sites on Crown land
    - manure management
    - licencing for livestock watering; Crown and private
- **nutrients**
  - livestock and manure management
    - livestock overwintering, siting, availability of sites on Crown land
    - manure management
- **riparian areas**
- **sediment and erosion control**
  - sediment and erosion control practices
  - irrigation management
- groundwater quality
- metals leaching from abandoned mines

9.3 Water Quantity (Cranbrook)

- **water availability**
  - livestock watering
  - supply agriculture with water from hydro reservoirs
  - recognition of cost of water
- **water conservation**
  - improved efficiency, recycling
  - metering
  - irrigation system management
- **competing uses for water**
  - watershed planning
  - land use and watershed planning, community based
- **flood control**

9.4 Air (Cranbrook)

- **burning**
  - good climate information (i.e. forecasting inversions)
  - flexibility in burning windows
  - several sources

- **dust and particulates**
  - reservoir operation and management
    - appropriate vegetation in drawdown areas
  - particulate matter regulations for industry
- **GHG**
  - methane

9.5 Biodiversity (Cranbrook)

- **noxious weed program**
  - noxious weed program funding and support, for both private and crown land
  - money for noxious weed program, IPM, appropriate technology
  - access to crown land
- **grassland management**
  - forest policy for thinning, burn management, clearing, logging
  - crown ALR managed as private land
  - forest practices; ingrowth, pull out of AAC; thin log, burn, grazing
  - reduced range increases conflict with wildlife
  - fire suppression
- **biodiversity planning**
  - education / awareness
  - society to pay for stewardship values, NGO partnerships
  - landscape planning for biodiversity; sustainable carrying capacity
  - sustainable carrying capacity, biologically and socially acceptable
  - value of habitat ecosystems
  - appreciation of interaction between agriculture and biodiversity
  - land use planning
    - redevelopment of agricultural land
    - loss of agricultural habitat
- **riparian function and aquatic habitat**
  - riparian / vegetative buffers, livestock access to water
  - livestock access to water, both private and crown
    - valley bottom ecosystems
  - conflicts between agriculture and fish habitat
- **wildlife damage**
  - crop damage
  - predators
- **species at risk**
- interactions between **domestic and wild animals**
- **insects**

9.6 Other (Cranbrook)

- land stewardship philosophy
- society to compensate agriculture for land stewardship
- land use planning; agriculture focus, proactive rather than reactive
- opportunity to expand agriculture, expand agricultural land use
- overall economic viability
- recreation; accountability, regulation
- loss of agricultural land (flooding, urban)
- education and awareness
- money for agricultural losses from Columbia River Treaty dams and reservoirs
- public education
- economic sustainability of agriculture
- transition and succession issues
- BMPs applied to crown land as well as private land

10.0 SUMMARY OF IDENTIFIED ISSUES AND RISKS

Table 3 summarizes the high and moderate issues and risks identified at each of the regional workshops. High priority issues and risks are noted in bold.
A similar table summarizing the risks and issues identified during the December 10, 2002 provincial workshop appears as Table 4.

The following sections provide a summary of issues and risks, by category, for the entire province.

Water Quality

Riparian function, pathogens, nutrients and sedimentation were rated as high or moderate priority issues for all regions. Pesticide management was often given a high or moderate priority, and somewhat less frequently, management of petroleum products. Woodwaste management was identified as an issue only in the Fraser Valley.

Water Quantity

The availability of water and water conservation were issues identified and given a high priority in all regions. Competing uses for water tended to be an issue given a high priority in the more densely populated areas and stormwater management in areas where there is more significant urban development with agriculture tending to be more concentrated in lowland areas (Fraser Valley and Vancouver Island). Water allocation was a commonly identified issue, particularly with respect to livestock watering.

Soil

Streambank and field erosion were the issues most often given a high priority, followed by soil structure and soil organic matter. Soil potassium, drainage and organic soil management were identified as high priority issues in the Fraser Valley and Vancouver Island. Pesticide accumulation was ranked as a moderate priority issue in the Fraser Valley and Okanagan Regions.

Air

Smoke, from burning land clearing debris and prunings, was the most commonly discussed issue under the air category. Spray drift and particulates were high priority issues in the Okanagan and greenhouse gases a high priority issue in the Fraser Valley and a moderate priority issue on Vancouver Island. Odour and ammonia were identified as a high priority issue only in the Fraser Valley.

Biodiversity

Riparian function and wildlife damage were identified as high or moderate priority issues at all workshops. Weeds were a high priority issue for all regions except the Fraser Valley. Management of grassland habitat was rated as a high priority in the Thompson and Kootenay Regions and as a moderate priority in the Peace and Cariboo. The need for biodiversity planning (determining biodiverstiy objectives) was identified in most regions. Species at risk was rated as a moderate priority issue. Drainage system maintenance was a high priority issue in the Fraser Valley and Vancouver Island Regions. Pesticides were identified a high priority issue only in the Okanagan.

In addition to the discussion of issues and appropriate BMPs there were several comments of a more general nature which were presented at the workshops:

- target both large and small farms
- be proactive rather than reactive
- collect baseline information and monitor both the results of BMPs implementation and the various program components
- increase the awareness by the public of the contributions which agriculture makes, in particular the contributions to habitat and biodiversity
- recognize good farm practices; agriculture does not often publicize it's success stories
- provide assistance for education, awareness, communication, extension, technology transfer (readily available consultant to answer questions and provide advice, information on suitable BMPs made readily available)
- utilize partnerships in resolving issues

- provide financial incentives (funding assistance, tax incentives) to help agriculture implement BMPs with the understanding that this is not a subsidy to agriculture but a contribution from society to assist agriculture in providing environmental benefits to all of society
- recognize the need for the economic sustainability of agriculture (there were several comments that farmers are a specie at risk); do not create excessive regulatory burden, assist with transition and succession issues, assist with renewal in agriculture (farmers are getting older)
- ensure that the impacts of other industries and recreational users are addressed

Table 3

SUMMARY OF REGIONAL SCANS OF AGRICULTURAL ENVIRONMENTAL ISSUES – BRITISH COLUMBIA

January/February 2003

Category	Vancouver Island	Lower Fraser Valley	Thompson	Kootenays	Prince George/Cariboo	Peace	Okanagan
WATER QUALITY	• **riparian function** • **sedimentation** • **nutrients** • **pathogens** • pesticides	• **riparian function** • **nutrients** • **pathogens** • **pesticides** • sedimentation • woodwastes	• **riparian function** • **pathogens** • **nutrients** • pesticides • sedimentation	• **pathogens** • **nutrients** • **riparian function** • sedimentation	• **riparian function** • **pathogens** • **sedimentation** • nutrients	• **riparian function** • **pathogens** • **nutrients** • **petroleum products and pesticides** • pesticides	• **riparian function** • **pesticides** • **petroleum products** • **nutrients** • **pathogens** • **sedimentation**
WATER QUANTITY	• **availability of water** • **ability to manage water** • **competition for water** • stormwater mgmt	• **availability of water** • **water conservation** • **competition for water** • **stormwater mgmt** • groundwater recharge	• **water conservation** • **water allocation** • **water availability**	• **availability of water** • **water conservation** • competition for water	• availability of water • water conservation	• **availability of water** • **water conservation**	• **water conservation** • **availability of water** • **competing uses**
SOIL	• **soil organic matter** • **soil potassium & nitrates** • **drainage** • **organic soil mgmt** • **soil structure** • **field erosion** • **streambank erosion**	• **drainage & flood control** • **field erosion** • **soil structure mgmt** • **organic soil mgmt** • **soil loss during harvest** • **high potassium** • acidity • research on soil testing • pesticide accumulation	• **streambank erosion** • **soil erosion** • soil structure	• **streambank erosion** • field erosion • soil structure	• **streambank erosion** • **field erosion** • soil organic matter	• **field erosion** • **soil fertility** • **streambank erosion**	• **soil organic matter** • **soil erosion** • **soil fertility** • pesticide accumulation
AIR	• **burning** • GHG	• **ammonia** • **odour** • **GHG**		• burning	• burning	• dust	• **burning** • **spray drift** • **particulates**
BIODIVERSITY	• **biodiversity planning** • **weeds** • **wildlife damage** • **riparian function** • **drainage channel maintenance** • species at risk	• **riparian function** • **drainage system mgmt** • **wildlife damage** • encroachment of urban land use • biodiversity planning • pesticides	• **weeds** • **grassland habitat** • **riparian function** • species at risk • wildlife damage	• **weeds** • **grassland habitat** • **biodiversity planning** • **riparian function** • wildlife damage • species at risk	• **riparian function** • **weeds** • wildlife damage • species at risk • grassland habitat	• **weeds** • **wildlife damage** • **riparian function** • grassland habitat • species at risk	• **riparian function** • **pesticides** • **biodiversity planning** • **weeds** • wildlife damage • species at risk

Table 4
PRELIMINARY REGIONAL ISSUE SCAN – BRITISH COLUMBIA
December 2002

Category	Vancouver Island	Fraser Valley	Thompson / Okanagan	Kootenays	Prince George / Bulkley	Cariboo / Chilcotin	Peace
WATER QUALITY	• Lack of riparian function • Manure management from livestock • Nitrates in groundwater • Ammonia in surface water • Pathogens in surface water	• Lack of riparian function • Manure management from livestock • Nitrates in groundwater • Ammonia in surface water • Pathogens in surface water • Pesticides in groundwater (limited) and surface water	• Riparian function • Nutrients from livestock • Nitrates and pesticides in groundwater • Pathogens from livestock and wildlife • Phosphorus in water • Increased intensity • Housed livestock and manure storage	• Riparian function • Nutrients from livestock • Nitrates and pesticides in groundwater • Pathogens from livestock and wildlife	• Riparian function • Nutrients from intensive livestock • Erosion due to stream instability • Siltation effects on fish habitat	• Riparian function • Nutrients from livestock (range and over-wintering) •Priority is phosphorus	• Riparian function • Nutrients from over-wintering livestock
WATER QUANTITY	• Surface water supply • Competition for water (rural/urban) • Stormwater management	• Surface water supply • Competition for water (rural/urban) • Stormwater management	• Storage and conveyance of irrigation water • Water for cattle • Water conservation (allocation) • Competition for water (rural/urban)	• Competition for water (rural/urban) • Conveyance of irrigation water • Domestic water supply • Water supply for livestock	•	• Winter water for cattle • Conveyance and storage of surface water for cattle and irrigation • Domestic water to farms	• Supply for domestic water
SOIL	• Drainage: trafficability and compaction • Soil loss due to harvest • Water and wind erosion due to lack of cover • Organic soil subsidence • High potassium in soil (dairy)	• Drainage: trafficability, compaction and seepage • Soil loss due to harvest • Water and wind erosion due to lack of cover • Organic soil subsidence • High potassium in soil (dairy)	• Streambank erosion • On steep fields, erosion due to over irrigation and storm runoff • High potassium in soil (dairy)	• Mainly stream erosion • Some field erosion in Creston area	• Streambank and field erosion	• Soil erosion (increasing on range?)	• Streambank and field erosion
AIR	• Ammonia • Odour • Greenhouse gas emissions	• Ammonia • Odour • Global warming gas emissions	• Smoke from burning of prunings, etc	• Smoke from burning of grass residue	•	•	•
BIODIVERSITY	• Drainage channel system maintenance • Riparian function • Wildlife damage (waterfowl, ungulates, bear)	• Drainage channel system maintenance • Riparian function • Waterfowl damage • SARA	• Riparian function • Wildlife damage (wolves, deer, elk) • Noxious weeds • Agricultural	• Riparian function • Wildlife damage (wolves, ungulates and waterfowl) • Loss of grassland to tree ingrowth	• Riparian function • Wildlife damage (wolves, ungulates) • SARA	• Riparian function • Wildlife damage (wolves, deer, elk, moose and bear) • Range impacts on biodiversity	• Riparian function • Wildlife damage (wolves, deer, elk) • Species at Risk Act (SARA)

Category	Vancouver Island	Fraser Valley	Thompson / Okanagan	Kootenays	Prince George / Bulkley	Cariboo / Chilcotin	Peace
	• SARA		contribution to wildlife habitat desert ecosystem • Loss of grassland to tree ingrowth • SARA	• Noxious weeds • SARA		• Noxious weeds • SARA	

11.0 CLOSURE

We trust that this summary report meets your requirements. Should you have any question, or require further clarification, please do not hesitate to contact the undersigned.

Yours very truly,

GOLDER ASSOCIATES LTD.

Patrick E. Brisbin, P.Eng., P.Ag.
Senior Water Resources Engineer and Agrologist

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APPENDIX I

WORKSHOP AGENDA AND PRESENTATION

AGRICULTURE AND ENVIRONMENT
REGIONAL OVERVIEW WORKSHOP

BRITISH COLUMBIA'S
ENVIRONMENTAL FARM PLANNING PROGRAM OF THE
AGRICULTURAL POLICY FRAMEWORK

Date

Location

1. Welcome • **Introductions & meeting rules** • **Meeting objectives and outcomes**	**10:00**
2. Background to the APF and EFP • **Water Quality** • **Water Quantity** • **Soil** • **Air** • **Biodiversity**	**10:10**
3. Identification of regional issues	**10:30**
Lunch Break	*12:00*
4. Beneficial Management Practices (BMPs) • **BMPs in use in the region** • **Potential new BMPs** • **BMPs to be supported by EFP** • **What can we expect to accomplish?**	**12:45**
5. Summary of regional focus and needs.	**2:15**
6. Adjourn	**3:00**

APPENDIX II

REGIONAL WORKSHOP ATTENDANCE

REGIONAL SCAN OF AGRICULTURE & ENVIRONMENT ISSUES
For Environmental Farm Planning of the Agricultural Policy Framework
January 27, 2003 - Abbotsford
Meeting Attendance List

Name	*Organization*	*Address*	*Phone Number*	*Email*
Mike Schroeder	Jacobs Farms Inc.			Milkmaid@shaw.ca
Rose Schroeder	Jacobs Farms, Abbotsford Soil Conservation & South Coastal Dairy Education			Milkmaid@shaw.ca
Grant Kowalenko	Agric. & Agri-Food Can., Pacific Agri-Food Res. Centre,Agassiz			Kowalenkog@agr.gc.ca
Kim Sutherland	BCMAFF			Kim.Sutherland@gems9.gov.bc.ca
Paul McFadden	Conservation Officer Service/Chilliwack			PaulMcfadden@gems2.bc.gov.bc.ca
Randy Tancock	Conservation Officer Service/Surrey			Randy.Tancock@gems8.bc.gov.ca
George Rushworth	MWLAP, Surrey			George.Rushworth@gems5.gov.bc.ca
Harmeet Atwal	BC Greenhouse Growers Association		308-6606	Atwal_Farms@hotmail.com
Maria Jeffries	BC Raspberry Industry Development Council			maria.jeffries@shaw.ca
Allen James	BCAC/Broiler Hatching Eggs			allenjames@telus.net
Michael Soth	B.C. Pork		858-9988	

Name	*Organization*	*Address*	*Phone Number*	*Email*
Ed McKim	Fraser Valley Strawberries		946-2834	
Rod Burr	B.C. Potato & Vegetables Assoc		946-8325	
John Pasternak	Environment Canada, Vancouver		666-8077	john.pasternak@ec.gc.ca
Mark Johnson	Fisheries & Oceans Canada		814-1076	johnsonm@pac.dfo-mpo.gc.ca
George Derksen	Environment Canada - Vancouver		666-3220	george.derksen@ec.gc.ca
Ron Ericksen	Environment Canada - Contractor		935-9213	ronjen@canada.com
Ann Bussell	Fishery Officer (Fisheries & Oceans Canada) - Delta		666-8727	bussella@pac.dfo-mpo.gc.ca
Dave Gibson	Langley Environmental Partners Society		533-6054	dave.gibson@hotmail.com
Tim Ballard	Lower Mainland Sheep Producers Association/Langley Ag. Adv. Committee		857-5722	tballard@telus.net
Dave Sands	BC Min of Agr. Food & Fisheries		556-3076	David.Sands@gems8.gov.bc.ca
Kevin Chipperfield	Sustainable Poultry Farming Group		556-7781	kchip@shaw.ca
Dan Buffett	Ducks Unlimited Canada		592-5003	d_buffett@ducks.ca
Sandra Traichel	Abbotsford Soil Conservation Group		556-3732	humoferric@pacificcoast.net

Name	*Organization*	*Address*	*Phone Number*	*Email*
Michael Wallis	BC Raspberry Industry Development Council		854-8010	mike@bcraspberries.com
Susan Smith	Ducks Unlimited Canada		592-5022	S_Smith@ducks.ca
Marcel Grashof	BCAC/BC Pork Producers		864-0435	grashof@uniserve.com
Ken Huber	Horse Council of BC		826-4412	huberx3@aol.com
Cornelis Hertgers	B.C. Milk Producers Assc.		796-9235	cordinefarms@aol.com
Ted Vander Gulik	BCMAFF		556-3112	
Jo Sleigh	Sheep		462-9465	Joannasleigh@aol.com
Christy Wright	Golder Associates		850-8786	cwright@golder.com

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January 29, 2003 - Prince George

MEETING ATTENDANCE LIST

Name	*Organization*	*Address*	*Phone number*	*Email*
Evelyn Pereira	*Fort George Shepherds Assoc.*	*Box 2425 Prince George, B.C., V2N 2S6*	*963-3868*	jprail@telus.net
Michelle Pask	*DFO Smithers*	*Box 578, 3177 Tatlow Rd, Smithers,B.C. V0J 2N0*	*847-4892*	paskm@pac.dfo-mpo.gc.ca
Greg Tamblyn	*CFDC Nadina*	*Box 2319,Smithers, B.C., V0J 2N0*	*847-1389*	greg.tamblyn@cfdcnadina.ca
Warren Wilson	*Dist "C" F.A.R.M. R.N.*	*15695 Thompson Rd. E., Prince George, B.C., V2M 5L2*	*967-4645*	warren_wilson@telus.net
Tom Muirhead	*Land and Water, B.C.*	*1101 4th Ave., Prince George, B.C. V2L 9H9*	*565-6440*	Tom.Muirhead@gems2.gov.bc.ca
Dan Bings	*Environmental Protection WLAP*	*Ste. 400 - 640 Borland St, Williams Lake, B.C., V2G 4T1*	*398-4897*	Dan.Bings@gems6.gov.bc.ca
Allan Martens	*BC Milk Producers, Own Farm*	*Box 2095 Vanderhoof, B.C., V0J 3A0*	*567-5189*	
Brock Bailey	*Environment Canada*	*2400 Ospika Blvd. S. Prince George, B.C.,V2N 3N5*	*561-6902*	Brock.Bailey@ec.gc.ca
Les Seefried	*DFO*	*3690 Massey Drive, Prince George, B.C. V2L 3P7*	*561-5180*	Seefriedl@pac.dfo-mpo.gc.ca
Brady Nelless	*Regional District F.F.G.*	*155 George St.*	*960-4400*	bnelless@rdffg.bc.ca
Donna Belanger	*Reg. Dist. Fraser Ft. George*	*155 George St*	*960-4400*	dbelanger@rdffg.bc.ca

Name	*Organization*	*Address*	*Phone number*	*Email*
Peter Fofonoff	*BCMAFF*	*300-640 Borland St., Williams Lake*	*398-4500*	Peter.Fofonoff@gems2.gov.bc.ca
Jim Tingle	*BCMAFF*	*707-399 Victoria Street, Prince George, V2W 5B8*	*565-7205*	Jim.Tingle@gems2.gov.bc.ca
Dave Riendeau	*BCMAFF*	*Bag 5000, Smithers VOJ 2N0*	*847-7247*	Dave.Riendeau@gems9.gov.bc.ca
Donna Thornton	*MWLAP, Evironmental Stewardship*	*4051 18th Avenue, Prince George, V2N 1B3*	*614-9923*	Donna.Thornton@gems8.gov.bc.ca
Sharolise Baker	*Carrier Sekani Tribal Coucil*	*#200 1460 6th Avenue, Prince George, V2L 3N2*	*562-6279*	sbaker@cstc.bc.ca
Laura Grafton	*BC Cattlemen*	*19235 Eena Lake Road Prince Geroge*	*967-4272*	barK@pgonline.com
Hal Taron	*North Cariboo Coop*	*1218 Hwy 97 N Quesnell, B.C., V2J 2Y4*	*992-7274*	
Don Lawrence	*DFO,Williams Lake*	*310A North Broadway,Williams Lake, B.C., V2G 2Y7*	*305-4017*	lawrenced@dfo-mpo.gc.ca
Nick Leone	*DFO/PG*	*3690 Massey Drive, Prince George V2N 2S8*	*561-5368*	leonen@pac.dfo-mpo.gc.ca
Mark Froese	*McBridge Farmers Institute*	*Box 176 McBride, B.C.*	*569-2561*	
Paul Leroux	*Eaglet Lake Insitute*	*Box 144, Willow River, B.C., V0J 3C0*	*568-2235*	
Paddy Doherty	*COABC*	*4451 Garvin Rd., Quesnel, B.C.*	*747-3287*	
David Kellett	*B.C. Forage Council*	*2125 Hunt-Sweder*	*330-4494*	kkellett@netbistro.com

Name	*Organization*	*Address*	*Phone number*	*Email*
		Prince George.		
King Campbell	*Ducks Unlimited Canada*	*Box 63 Alexis Creek, B.C.*	*398-7028*	K_Campbell@ducks.ca
Ron Ray	*Fraser Nechako Bred Heifer*	*Box 174 Ft. Fraser, V0J 1K0*	*690-7431*	rray@hwy16.com
Wayne Ray	*Nechako Valley Regional Cattlemens Association*	*Box 19 Fort Fraser, B.C., V0J 1N0*	*690-7579*	smithcreek@uniserve.com
Pete Spencer	*BCAC/BCCA*	*166 Timberline Road, Kelowna, B.C.*	*764-0376*	
Kelvin Johnson	*District C Farms Inst*	*11260 McBride Timber Rd*	*560-5581*	Kelvin_Johnson@telus.net
Ron Erickson	*Environment Canada (Contractor)*	*8377 Mountainview Dr., Whistler, B.C.*	*935-9213*	Ronjen@canada.com

January 30, 2003 - Dawson Creek

MEETING ATTENDANCE LIST

Name	*Organization*	*Address*	*Phone Number*	*E-Mail*
Mac Leask	*Peace River Regional Cattlemen*	*GD Arras BC V0C IBO*	*250-843-7022*	mjleask@pris.ca
Irmi Critcher	*BC Grain Producers*	*Box 640, Taylor, B.C.*	*789-9287*	irmgard@pris.bc.ca
Sheila Withrow	*Northern Health Authority*	*1001 - 110th Ave, Dawson Creek, V1G 4X3*	*784-2400*	*Sheila.Withrowe.gems@.gov.bc.ca*
Kerry Clark	*BCMAFF BCIA*	*BCMAFF, Fort St. John*	*787-3217*	Kerry.Clark@gems9.gov.bc.ca
Brian Haddow	*AAFC/PFRA*	*#104-1005-104th Ave, Dawson Creek*	*782-3116*	haddowb@agr.gc.ca
Jill Copes	*Peace River Regional District*	*Box 44 CecilLake, B.C., V0C 1G0*	*785-2151*	copes@fsj.net
Allan Blair	*BCMAFF*	*Fort St. John*	*787-3241*	Allan.Blair@gems7.gov.bc.ca
Fred Jarvis	*Peace River Regional District*	*Taylor*	*262-2913 789-3721*	fredjarvis@shaw.ca
Reg Whiten	*Peace River Watershed Council*	*Box 285 Moberly Lake, B.C. V0C 1X0*	*788-9635*	interraplan@uniserve.com
Allen Eagle	*AAFC/PFRA*	*#104 - 1005 - 104th Ave, Dawson Creek, V1G 2H9*	*782-3116*	eaglea@agr.gc.ca
Chris Haab	*BCMPA*	*RR #1 Fort St. John, B.C.*	*785-4898*	

Name	*Organization*	*Address*	*Phone Number*	*E-Mail*
Rod Harmon	*City of Dawson Creek*	*Box 150 Dawson Creek, B.C., V1G 4G4*	*784-4073*	rharman@dawsoncreek.ca
Charles Sutherland	*Forage Association*	*Box 163, Groundbirch, V0C 1T0*	*780-2221*	
Sandra Burton	*Peace River Forage Association*	*Box 141, Farmington, B.C., V0C 1N6*	*789-6885*	sburton@pris.bc.ca
Walter Fritshe	*D.C. Sheep Breeders*	*Box 864 Dawson Creek*	*782-5187*	
Rick Kantz	*North Peace Farmers Institute*	*RR 1 S16 C76 Fort St John*	*785-1135 262-1954*	rkantz@aniak.com
Kim Lucas	*Peace Country Bison Assoc*	*RR 1 Site 15, Comp 116, Fort St. John, B.C.,V1J 4M6*	*787-1862 785-8084*	klucas@pris.bc.ca
Murray Clark	*Ducks Unlimited Canada*	*Box 7,Townslake, B.C. V0C 2L0*	*604-786-0220*	m.clark@ducks.ca
Ron Erickson	*Environmental Canada (Contractor)*	*8377 Mountainview Dr Whistler, B.C.*	*604-935-9213*	ronjen@canada.com
Layne Lybbert	*Land & Water B.C.*	*370-1003-110th Ave Fort St. John, B.C., V1J 6M7*	*787-3423*	layne.lybbert@gems3.gov.bc.ca
Nick Baccante	*BCMWCAP*	*#400 - 1003 - 110th Ave Ft. St. John, B.C., V1J 6M7*	*787-3289*	Nick.Baccante@gems3.gov.bc.ca

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February 3, 2003 - Kamloops

MEETING ATTENDANCE LIST

Name	*Organization*	*Address*	*Phone Number*	*E-Mail*
Roy Benson	*Ginseng*	*5495 Learmouth Rd., Coldstream, B.C., V1B 3E8*	*545-4777*	roybenson@shaw.ca
Menno Schellenberg	*Ginseng*	*2073 Tremerton Dr., Kamloops, V2E 2K7*	*Work 372-9500*	mennos@telus.net
Sheldon Romain	*DFO*	*985 McGill Place, Kamloops, V2C 6X6*	*851-4880*	romains@pac.dfo-mpo.gc.ca
Karen Bothe	*MSRM*	*1259 Dalhousie Dr. Kamloops*	*371-6242*	*Karen.Rothe@gems8.gov.bc.ca*
Ron Smith	*MSRM*	*1259 Dalhousie Dr. Kamloops*	*371-6206*	Ron.Smith@gems6.gov.bc.ca
Kevin Murphy	*MAFF*	*4607 - 23rd St, Vernon, V1T 4R7*	*260-3012*	Kevin.Murphy@gems7.gov.bc.ca
Wray McDonnell	*MAFF*	*200-1690 Powick Road, Kelowna, V1X 7G5*	*861-7201*	Wray.McDonnell@gems2.gov.bc.ca
Bruno Delesalle	*Grasslands Conservation Council of B.C.*	*954 A Laval Cres, Kamloops, V2C 5P5*	*374-5787*	bruno.delesalle@bcgrasslands.org
Jim White	*Grasslands Conservation Council of B.C.*	*Box 61 Knutsland, B.C. V0E 2A0*	*372-5347*	jimwhite@telus.net
Duncan Hendricks	*Golder Associates*	*Golder, Kamloops*	*828-6116*	dhendricks@golder.com

Name	*Organization*	*Address*	*Phone Number*	*E-Mail*
Nancy Elliott	*Golder Associates*	*Golder Kamloops*	*828-6116*	nelliott@golder.com
Ron Erickson	*Env. Can. Contractor*	*8377 Mountain View Dr. Whistler, V0N 1B8*	*604-935-9213*	ronjen@canada.com
Ted Van der Gulik	*BCMAFF*	*1762 Angus Campbell Rd Abbotsford V3G 2E5*	*604-556-3112*	*Ted.vanderGulik.gems8.gw.bc.ca*
Bob Finley	*TNRD*	*300-465 Victoria Street Kamloops V2C 2A9*	*377-8673*	bfinley@tnrd.bc.ca
Ken Christian	*Interior Health*	*519 Columbia St Kamloops V2C 2T8*	*851-7309*	ken.christian@interiorhealth.ca
Jennifer Cunningham	*BC Sheep Federation*	*Jay Springs Ranch, Pinanton Lake, B.C.*	*573-3609*	jsr.cunningham@telus.net
Bernard Vere	*B.C. Bison Assoc.*	*Box 2206, Merritt*	*315-8010*	Ttonka@ttonka
Joanne Harkness	*Urban Systems Ltd. (Representing City of Kamloops)*	*Suite 200 - 286 St Paul St,Kamloops, B.C.*	*374-8311*	Jharkness@urban-systems.com
Brian Baehr	*BC Agriculture Council*	*102-1482 Springfield Rd, Kelowna, V1Y 5V3*	*763-9790*	bebaehr@silk.net
Rick Howie	*Water Land & Air Protection*	*1259 Dolhousee Drive*	*371-6245*	Rick.Howe@gems6.gov.bc.ca
Barb John	*Water, Land Air Protection*	*970A Camosum Cres Kamloops, V2C 6G2*	*571-5263*	Barbara.John@gems8.gov.bc.ca
David Borth	*B.C. Cattlemens Assoc*	*10145 Dallas Dr. Kamloops, V2C 6T4*	*573-3611*	bccattle@kamloops.net
Doug Murdoch	*Ginseng Ass, BC Forage*	*General Delivery*	*457-9367*	

Name	*Organization*	*Address*	*Phone Number*	*E-Mail*
		Walhachin		
Graham Strachan	*MAFF*	*162 Oriole Rd Kamloops, V2C 4N7*	*371-6054*	Graham.strachan@gems8.gov.bc.ca
Doug Veira	*AAFC*	*Research Station 3015 Ord Rd,Kamloops V2B 8A9*	*554-5205*	Veirad@agr.gc.ca
Peter Falsetta	*MAFF*	*162 Oriole Rd. Kamloops*	*371-6063*	*Peter.Falsetta@gems2.gov.bc.ca*

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February 4, 2003 - Summerland

MEETING ATTENDANCE LIST

Name	*Organization*	*Address*	*Phone Number*	*E-Mail*
Gerry Neilsen	*Agriculture & Agri-Food Canada*	*Pacific Agri-Food Research Centre, Summerland, B.C., V0H 1Z0*	*250 - 494-7711*	neilseng@agr.gc.ca
Ron Ericksen	*Enviroment Canada Contractor*	*8377 Mountainview Drive, Whistler, B.C., V0N 1B8*	*604 - 935-9213*	ronjen@canada.com
Pete Preston	*Rutland Waterworks District*	*Hwy 33 West Kelowna, B.C., V1X 1X7*	*768-8782*	pete@rutlandwaterworks.com
Gavin Young	*B.C. Fruit Packers Field Service*	*3656 Brown Rd, Westbank, B.C.*	*768-5355*	gyoung@bctree.com
Howard Thistlewood	*AAFC*	*Pacific Agr-Food Research Centre Summerland, B.C. V0H 1Z0*	*494-6419*	thistlewoodh@agr.gc.ca
Jerry Vakent	*Ministry Water, Air, Land Protection*	*Skaha Lake Rd, Penticton, B.C.*	*490-8220*	Jerry.Vakenti@gem2.gov.bc.ca
Olivier Combret	*B.C. Wine Institute*	*P. O. Box 1170 Oliver, B.C., V0H 1T0*	*498-6966*	info@combretwine.com
Tom Ethier	*Fish & Wildlife WLAPt*	*201-3547 Skaha Lake Rd., Penticton, B.C.,*	*490-8200*	Tom.Ethier@gems9.gov.bc.ca

Name	*Organization*	*Address*	*Phone Number*	*E-Mail*
		V2A 7K2		
Carl Withler	*M.A.F.F., Kelowna*		*861-7229*	Carl.Withler@gem3.gov.bc.ca
Steve Thomson	*BCAC, Kelowna*	*102 - 1482 Springfield Kelowna, B.C., V1Y 5V3*	*763-9790*	bcac@bcagcouncil.com
Dave Gartrell	*Orchardist Summerland*	*RR #4 Summerland, B.C., V0H 1Z0*	*494-9245*	pgartrell@shaw.ca
Peter Waterman	*BCFGA Exec*	*4307 Gartrell Rd, R.R.#4, Summerland, B.C., V0H 1Z0*	*494-0850*	peter.waterman@shawcable.com
Eugene Hogue	*Agri Canada Res. Centre*	*Agri Canada Research Centre, Summerland*	*494-6371*	hoguel@agri.gc.ca
Jim Campbell	*BCMAFF*	*Box 5000, Oliver,B.C., V0H 1T0*	*498-5254*	Jim.Campbell@gems1.gov.bc.ca
Les Molnar	*MWLAP*	*c/o MOF, Box 2650 Grand Forks, V0H 1H0*	*442-5411*	Les.Molnar@gems4.gov.bc.ca
Scott Smith	*AAFC*	*Summerland Res. Station*	*494-6382*	smithcas@agr.gc.ca
Denise Neilsen	*AAFC*	*PARC Summerland*	*494-6417*	neilsend@agr.gc.ca
Yvonne Herbison	*PMRA*	*1905 Kent Rd, Kelowna, B.C. V1Y 7S6*	*470-4890*	herbisony@inspection.gc.ca
Mark Watt	*City of Kelowna*	*1435 Water St, Kelowna, B.C., V1Y 1J4*	*862-3339 (343)*	mwatt@city.kelowna.bc.ca
Allan Patton	*V.P., B.C.F.G.A., Director B.C.A.C.*	*RR #1 S46 C13 Oliver,B.C., V0H 1T0*	*498-2878 (ph/fx)*	alpatton@vip.net
Bill Eggert	*B.C.W.I. Director*	*R.R. #1 S66 C15*	*498-2211*	beggert@img.net

Name	*Organization*	*Address*	*Phone Number*	*E-Mail*
Hans Buchler	*B.C.I.G.A., R &D/BCWI*	*R.R.#7 S5-53, C-6, Oliver B.C., V0H 1T0*	*498-2786*	hbuchler@vip.net
Rochelle Eisen	*Rare Enterprises*	*Site 48 RR 3 C7, Summerland, B.C., V0H 1Z0*	*494-7980*	rare@telus.net
Jacqueline Foley	*Golder Kelowna*	*220-1755 Springfield Rd Kelowna, B.C., V1Y 5V5*	*860-8424*	jfoley@golder.com
Wray McDonnell	*MAFF*	*200 - 1690 Powick Rd Kelowna, B.C. V1X 7G5*	*861-7201*	*Wray.McDonnell@gems2.gov.bc.ca*

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February 6, 2003 - Nanaimo

MEETING ATTENDANCE LIST

Name	*Organization*	*Address*	*Phone Number*	*E-Mail*
Jim Sandwith	*Peninsula Agricultural Commission*	*2260 Kedge Anchor Rd North Saanich, B.C.*	*656-2725*	j.sandwith@shaw.ca
Virginia Jacobsen	*District "A" Farmer's Inst.*	*10605 Southin Road Ladysmith, V9G 2A8*	*246-1225*	*southin@telus.net*
Jill Hatfield	*BCMAFF*	*2500 Cliffe Ave, Courtenay, B.C.*	*897-7518*	Jill.Hatfield@gems8.gov.bc.ca
Odete Pinho	*Island Farmers Alliance*	*C/o BC MAFF 2500 Cliffe Ave Courtenay, B.C.*	*897-7517*	odete.Pinho@gems3.gov.bc.ca
Jan Hill	*Inter Island Sheep Breeders Assoc.*	*1061 Cherry Point Rd, R.R. #3 Cobble Hill, B.C. V0R 1L0*	*743-9747*	moonfleetfarm@shaw.ca
Colin Springford	*Coombs Farmers Institute*	*1950 Northwest Bay Road, Nanoose Bay V9P 9C5*	*468-7520*	cdspring@nanaimo.ark.com
Gerry McClintock	*Comox Valley Farmer's Institute*	*3419 Dove Creek Road Courtenay, V9J 1P3*	*334-4562*	mcclin@island.net
Ron Erickson	*Environment Canada Contractor*	*8377 Mountain View Dr Whistler, V0N 1B8*	*604 - 935-9213*	ronjen@canada.com
Len Wallbank	*Islands Farmers Inst. Salt Spring*	*208 Sunset Drive Salt Spring Is. V8K 1L4*	*537-4398*	wallbank@saltspring.com

Name	Organization	Address	Phone Number	E-Mail
John Willox	District A Farmer's Institute/Island Natura Growersl	Duck Creek Farm 124 Tripp Road Salt Spring Island, V8K 1K5	537-5942 Fax - 537-5220	duckcreek@saltspring.can
Keith Wyndlow	Nanaimo-Cedar Farmer's Institute	13110 Doole Road Ladysmith, V9G 1G6	245-4091 Fax 245-8553	keith_kiyi@hotmail.com
Dave Lestock-Kay	Cowichan Ag. Society Island Milk Producers B.C. For Ag. Council	3080 Wilkinson Road Cobble Hill, V0R 1L0	743-3706	davejoan@islandnet.com
Mary Hof	BC Milk Producers	1078 Cherry Pt. Rd RR#3 Cobble Hill,V0R 1L0	743-3706	gmhof@islandnet.com
Adrian Vanden Dungen	Island Milk Producers	4838 Koksilah Rd, Duncan, V9L 6N8	748-4034	Greenisl@shaw.ca
Terry Ludwig	Black Creek Round Table	2186 A Endall Rd Black Creek,V9J 1G8	337-8309/fax 337-8329	tlmilk@corbreon.com
Ron Harris	Vancouver Island Broiler Growers	2955 Mtn. Road, Duncan, V9L 6N4	748-1563	Ronharris@telus.net
Ron Emblem	Alberni Farmers Institute	RR #1 9250 Somers Rd Port Alberni, V9L 7L5	723-5535	emblem@uniserve.com
Jennifer Dyson	Prov Hort Representative EFP Working Group IFA	2795 Grafton Ave Qualicum Beach,V9X 1W8	752-1564	awpb@island.net
Jeff Hamilton	Cranberry Marketing Board	1871 Geraldine Road Courtenay, V9J 1Y3	339-6787	jsmham@island.net
Michael Betts	BCMAFF	808 Douglas St	356-1533	Michael.Betts@gems5.gov.bc.ca

Name	*Organization*	*Address*	*Phone Number*	*E-Mail*
		Victoria		
Wayne Haddow	*BCMAFF*	*5785 Duncan St Duncan*	*746-1210*	Wayne.Haddow@gems3.gov.bc.ca
Ron Bertrand	*BCMAFF*	*1767 Angus Cambell Road, Abbotsford*	*556-3103*	Ron.Bertrand@gems6.gov.bc.ca

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February 10, 2003 - Cranbrook

MEETING ATTENDANCE LIST

Name	*Organization*	*Address*	*Phone Number*	*E-Mail*
Alan Edwards	*Waldo Stockbreeders Association*	*PO Box 250, Jaffray V0B 1T0*	*429-3324*	medwards@cyberlink.bc.ca
Dennis Ditts	*Waldo Stockbreeders Assoc*	*Elko, B.C., V0B 1J0*	*529-7404*	
Ron Erickson	*Contractor - Enviroment Canada*	*8377 Mountain View Dr Whistler, V0N 1B8*	*604 - 935-9213*	ronjen@canada.com
Bob Hlatky	*WLAP*	*Box 264, Nelson V1L 5P9*	*354-1112*	bhlatky@yahoo.com
Brader Charlesworth	*KL.A. (Kootenay Livestock Assoc) Waldo Stockbreedeers Ass.*	*Box 1, Site 5B, RR #1 Elko, V0B 1J0*	*529-7614 Fax - 529-7613*	
Carrie Morita	*Ministry of Water, Land and Air Protection*	*#401 - 333 Victoria St Nelson,V1L 4K3*	*354-6357*	Carrie.Morita@gems4.gov.bc.ca
Jolene Roggett	*Ministry of Water, Land and Air Protection*	*#401 - 333 Victoria St Nelson, V1L 4K3*	*354-6356*	Jolene.Roggett@gems1.gov.bc.ca
Noreen Thielen	*WSBA KLA*	*Newgate Rd, R.R.#1 Elko, V0B 1J0*	*887-3232*	
Candace Piccin	*Wild Ungulate Damage Compensation Program (KLA)*	*453 - 6th Ave Kimberley, V1A 2V4*	*427-5931*	dynamicoutlook@cyberlink.bc.ca
Karen Barton	*Waldo Stock Breeders*	*Box 12 Grasmere, V0B*	*887-3459*	karbar@telus.com

Name	*Organization*	*Address*	*Phone Number*	*E-Mail*
		1R0		
Dan Byron	*Interior Health*	*1212 - 2nd St. N. Cranbrook, V1C 4T6*	*426-1385*	dan.byron@interiorhealth.ca
Shaun Malakoe	*Interior Health Authority*	*2nd Floor, Kutenai Place, Nelson*	*354-6300*	shaun.malakoe@interiorhealth.ca
Serge Zibin	*Kootenay Region Interior Health*	*2nd Floor, 333 Victoria St, Nelson, V1L 4K3*	*354-6838*	serge.zibin@interiorhealth.ca
Don Corrigal	*Interior Health*	*1212 - 2nd St. N.,Cranbrook,V1C 7A7*	*426-1455*	don.corrigal@interiorhealth.ca
Wray McDonell	*MAFF, Kelowna*		*861-7201*	
Cam McDonald	*McDonald Ranch*	*Box 86, Grasmere, V0B 1R0*	*887-3207*	mrl@elkvalley.net
Gordon Burns	*Mountain Magic Ventures*	*Box 94, Wardner V0B 2J0*	*429-3800*	gordburns@cyberlink.bc.ca
Don Low	*BCMAFF*	*Cranbrook*	*428-6009*	Don.Low@gems2.gov.bc.ca
Gary Tipper	*MWLAP*	*205 Industrial Rd. G, Cranbrook, V1C 7G5*	*489-8553*	Gary.Tipper@gems2.gov.bc.ca
Pam Cowtan	*MSRM*	*205 Industrial Rd. G., Cranbrook, V1C 3G5*	*489-8540*	Pamela.Cowtan@gems4.gov.bc.ca
Lyle Collinson	*Brown Ranch*	*PO Box 41 Stn Main Cranbrook, V1C 4H6*	*426-5575*	
Les McDonald	*WLAP*	*205 Industrial Rd G Cranbrook, V1C 7G5*	*489-8517*	Les.Mcdonald@gems1.gov.bc.ca
Kevin Paterson	*RDEK*	*19 - 24th Ave S. Cranbrook, V1C 3H8*	*417-6796 489-2791*	kpaterson@monarch.net
Doug Barraclough	*TaTa Creek Farmer's*	*503 - 6th Ave.,*	*427-3126*	

Name	*Organization*	*Address*	*Phone Number*	*E-Mail*
	Inst	*Kimberley, V1A 2V5*		
Kenton Andreashuk	*CKFRP HCSP-DFO*	*7468 Mission Rd, Cranbrook, V1C 7Es*	*417-3474*	kenton@cyberlink.bc.ca
Faye Street	*AEPI*	*Box 173, Cranbrook, V1C 4H1*	*426-5990*	
Steve Street	*KLA*	*Box 173, Cranbrook, V1C 4H1*	*426-4315*	
Mike Malmberg	*BCMAFF*	*42-8th Ave S. Cranbrook*	*426-1535*	
Elliott Pighin	*BCCA*	*Box 85, Ft. Steele, V0B 1N0*	*426-2377*	
Rod Savage	*Rancher KLA*	*7284 Pippin Road, Cranbrook, V1C 7B2*	*426-6578*	
Brian McKersie	*Rancher, WFI*	*Box 475 Canal Flats, V0B 1B0*	*349-5275*	
Lee Holm	*KLA*	*Box 100, Tata Creek*	*422-3637*	leeholm@shaw.ca
Don Lancaster	*Rancher/KLA*	*4079 Mayook Sett Rd, Cranbrook, V1C 7B2*	*426-6322*	ledi@telus.net
Colin Morrison	*Rancher*	*Box 14 Wardner V0B 2J0*	*429-3965*	*ccranch.com*

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APPENDIX III

REGIONAL WORKSHOP MINUTES

Minutes of EFP Workshop - Abbotsford

January 27, 2003

How does EFP relate from Regional to On-Farm?
Regional emphasis on which issues
To determine how significant are certain issues

Would funding be available for regional focus on issues?
Yes, possibly
May get provincial focus
Need regional info to get the package for funding

Accountability comes from these meetings
shows a formal process, are we addressing concerns, process describes outcomes

ISSUES

WATER

slide shown with previously identified issues

groundwater recharge, changes in water table/use of groundwater

need to look at both intensive livestock and small-scale farms

another APF program – National Water Supply Expansion Program
to provide funding for water issues (drought)

this workshop to focus on environmental issues

water conservation for everyone, not just farmers

groundwater;

competing uses, urban and agriculture
secure water source for ag. use
need to identify, current/future use/needs

a general concern is small farms (i.e. hobby farms)

may not be associated with a producer association
need education - need buy-in by them for EFPs

how to provide long-term security for water
water conservation (better water use efficiency)
system efficiency improvements and system conversions – a cost issue here

water recycling, i.e. cranberry, wash water
financial incentives would make this easier to do

groundwater quality
high water quality required for food safety
rate of application of chemicals etc

urban impacts on ag lowlands – water quality and quantity
lots of other programs looking at urban issues

nutrients - dairy, poultry, etc, varies within the Lower Fraser Valley

nitrogen can be monitored - an indicator for Ag. Can.

tremendous diversity

nutrients and pathogens

impacts depend on end user

riparian issues
waterfowl contaminating the waterway, can be a food safety issue
may lose 1/3 of farm if riparian areas given up, a big concern

non-point source pollution

nutrient management should include livestock and farm wastes

feeding livestock to reduce nutrients in manure (feed rations)

SOIL

waste management, using wastes as soil amendments

organic/inorganic contamination, e.g. biosolids, gypsum

soil removal - nurseries, turf operations
tillage
timing, implements
promotion of alternative methods

filling land within floodplain
may not be agriculturally acceptable or useful

compensation for "loss of land"
no setbacks are required right now - it is voluntary
maybe $ to offset loss of land

fertilizing not allowed along creeks – buffers are required
a solution? – compensation?

there should be no compensation for those who are in contravention of any regs

topsoil management
when adding infrastructure
soil leveling
soil storage - control of nitrate leaching if not planted

somewhat covered under Land Reserve Commission guidelines/practices

soil acidification, acidity issues

nutrients from manure - higher value than fertilizers, improve the soil

potassium? phosphorus?
more of a long term issue, possibly
not well studied

pesticide accumulation in soils, a soil quality issue
in relation to biodiversity (birds, etc.)

drainage and flood control
need emphasis

soil and water interconnected
do not have a full understanding

organic matter depletion in topsoil
still need manure, but use it properly to enhance organic matter

soil structure management

aeration
compaction
organic matter

AIR

interfarm issues of particulate matter
manure application
i.e. berry beside dairy
timing of cropping, pesticide applications, picking, manure application
intercommodity interaction / awareness

greenhouses, burning for CO_2 for use in greenhouses
some use heat within greenhouse
some without technologies to store this energy

ammonia
CEPA has designated it as a toxic substance
surface water – impacts to fish, amphibians
role of ammonia in particulates?

unsure of role of ammonia in particulates
is it a limiting factor ?
may become more important issue

global warming
are ag. producers such a problem? only contribute 8 to 12%
livestock only ?

growing crops are a positive
greenhouse gas emissions are a negative

is agriculture a net contributor?

BIODIVERSITY

agriculture provides food for waterfowl
ditch maintenance; timing, classification of watercourses

drainage ditches have become habitat

SARA (Species at Risk) is now legislation

are farmers becoming an "endangered species" ?
need program to increase awareness of and interest in agriculture

dangerous / nuisance wildlife

- coyotes (neospora)
- starlings (west Nile)

beaver

hazelnuts, problems with squirrels

pesticide impacts on wildlife

wildlife corridors / movement
- possibly only in Delta (migratory birds)

it is an issue for bears (e.g. north side of Fraser River)

there are lots of programs looking at the biodiversity issue

funding to assist in determining priorities
- research, i.e. pesticides
  - IPM
  - target specific accumulators

need to put a more positive spin on biodiversity (overlap we can't avoid)
- working with conservation groups

how they (ag and conservation groups) can fit together/partnerships

agroforestry
size of homes in agricultural areas

greenhouses and associated hard surfaces - runoff management

Abbotsford by-law for % lot coverage when runoff management system needed
other municipalities may not have such bylaws

- greenhouses - some need upgrades to recycle rainwater etc.
- cost can be prohibitive for older operations

- manure storage and potential impacts on groundwater

urban/rural interface
urban use creeping into ag. land
negative impacts by traffic, large footprint homes
if large homes can't happen in urban area - shouldn't be allowed in ag areas
need Agriculture Area Plans, has a municipal element
pesticides may come from urban sources upstream

BENEFICIAL MANAGEMENT PRACTICES

WATER QUALITY

financial and program assistance to meet regulations

expanding manure storage (assistance up to $20,000)
must have owned the farm before April 1, 1998 (must be a farm then)
hobby farms could apply (none have yet)

if industry can't do it on their own with available resources then they should get more money

is manure storage still a problem
need money to identify this (both large and small farms)
adequate storage is required for manure management

research money for better manure management systems

money for both producers and users of manure

hog fuel management, especially in the horse industry
education, demonstration sites

horse industry
money for education, manure storage
some manure used by nurseries, some to landfills
readily available consultant to be there to answer questions and provide help

this (advice) is part of the process

alternative to manure storage
i.e. collection/transfer plus on farm composting
alternate uses for manure
biomass cogeneration

education/awareness
then monitoring - i.e. small watercourses
on farm plus off farm

what is the problem, problems need to be defined
effort into education on whole farm nutrient balances

compensation for land lost for buffer strips/riparian zones

ag. producers should be recognised for their efforts to protect BCs resources

funding for things we haven't thought of and which may come up during EFP process

money for monitoring

improving working relationship with Fisheries (DFO)
seems that fish have more rights

calibration of sprayers (and volumes) for pesticides
on a yearly basis

long term soil monitoring

education (pest management) from treatment to prevention and alternatives

WATER QUANTITY

maintain storage, improve conveyance

better scheduling irrigation systems

system modification for water recycling
chlorine in washwater

quantify water use then secure supply for agriculture
money for monitoring to quantify actual use

urban stormwater management

SOIL

money available for conservation
cropping, tillage
Abbotsford Soil Conservation Association programs
successful program

management of cover crops
farm vehicle movement (manage to reduce compaction)

how to manage high-traffic livestock areas (or other ag. uses)
rather than hogfuel
trails with geotextiles or other alternatives
incentives to use alternatives to hog fuel

turf farmers, soil removal, soil replacement
education on soil amendments, what is good, what doesn't work

municipalities - money for drainage maintenance
money for planning for agriculture

subsurface drains as contaminant pathway
more money for research needed

soil testing
no advancement to techniques/testing/interpretation since 1960s

not a very reliable tool

AIR

on-farm management of ammonia
from barns, spreading, etc

Environment Canada studies, what are the results
depends on what science/studies show
may transfer problem from air to land

odour management, be proactive
be careful about creating regulatory, enforcement burden

partnerships - methane production
look to european studies

odour reduction techniques

BIODIVERSITY

as urban development increases, wildlife will become more concentrated on farms

incentives to attract wildlife (lure crops)

partnerships

integrate the other topics with biodiversity

buck being passed to agriculture due to increase in urbanization

this should be municipal responsibility
partnerships?

Reed Canary Grass
a huge problem in the region

MINUTES OF EFP WORKSHOP - PRINCE GEORGE

022-5120/1000
January 29, 2003

ISSUES

SOIL

soil contamination from petroleum products
field erosion
impacts from intensive livestock areas (compaction)

stream erosion
both ways; loss of land, introduction of sediment

drainage management

soil organic matter
loss from tillage
some soils naturally low

water management impacts on soil

release of phosphorus from soils when clearing

WATER

fertilizer applications not an issue
don't apply enough fertilizer
manure management may be a problem

nutrients can promote algae growth
may contain cyanide

Nechako River – 5 to 10 degrees colder than tributaries
irrigators (Vanderhoof) prefer to utilize water from tributaries

water temperature an issue in forestry
- system dependent
- what is the source

agricultural impacts on runoff
- water diversion impacts on annual flow regime
- region / system specific

siltation

Bulkley Valley - some pathogens (manure issues)
- not monitored, so don't really know extent, severity

beaver dams

pesticides not heavily used
- may not be an issue (but no monitoring)

perceived water problems in spring
water flows through organic matter, brown colour but not necessarily manure

access to water
- may overtax convenient source
- preference for gravity supply rather than pumping.

winter water for cattle
- cattle occasionally fall through the ice

intake screens (fish exclusion screens)

solutions are difficult on a farm budget

silage effluent

location of old on-farm dumps

underground oil tanks

manure management

livestock access to streams

water licences
for stockwatering works are supposed to be located outside the wetter perimeter of the stream

have water shortages in this area

water management - stagnant water
mosquitoes
particularly on hobby farms
could be a regional issue

grazing management
not just in riparian areas and near water courses
what happens upland also has on impact.

AIR

air quality, particulate matter impacts on livestock
pulp mill, industrial sources
industrial odours

smoke from land clearing
indiscriminate burning of wastes

low temperature fires of land clearing debris
PPH's

waste management
odours from intensive livestock leads to complaints

burning crop residues not an issue.

BIODIVERSITY

noxious weeds
sees problems in other parts of the province
don't want big problems here.

clearing of critical wildlife habitat, mule deer
south slopes for overwintering
most people have too narrow a definition of riparian area

dispose of mortalities
preferred methods of disposal are not available in winter

too many predators
bears, wolves, coyotes, cougars, foxes

pesticide impacts on bird populations

pesticide impacts on soil micro-organisms

culverts
impacts on fish, barriers

when natural forest cover cleared for agriculture, wildlife displaced

impacts of grazing cattle on grass lands

don't know what the biodiversity objectives are

encroachment of trees
much of the region's grasslands have disappeared
over the last 60-80 years due to MOF policy
trees are planted
no clearing on south slopes which had been grasslands

wildlife damage to crops
Bulkley Valley – elk
geese, white tail and mule deer damage of standing crops, hay
bears eating crops
moose damaging fences

SAR (Species at Risk)
coho, white sturgeon, bull trout
are agricultural impacts the issue

farmers are a SAR

disease spread by wildlife
crows, ravens, coyotes

pine beetles
loss to farmers
cut stumps short - twice as difficult to clear
forced to plant trees

forestry practices
impacts of clearcuts on farmers downstream

perception of agriculture creating large impacts

BENEFICIAL MANAGEMENT PRACTICES

SOIL BMPS

settling ponds, silt fences for sediment control

monitoring vegetation, crop management

tillage management, no till, conservation tillage

grazing practices (grazing management plans)
timing, density

set backs from water courses
fencing for cattle

cover crops

stabilize high traffic areas (gravel, mulch)

access road stabilization
road drainage (culverts, ditches), prevent concentration of flows

more info on maintaining organic soils
water table control (control rather than removal of all the water)

flood control, store water for later irrigation

cut off old flood channels then don't have relief path when have higher floods
results in erosion of farm land
guidelines needed for utilization (land use) of flood pathways

siting of livestock
need to be moved around; spread manure, limit soil disturbance

nutrient management, fertilizer management to maintain productivity of soil

flood management, streambank erosion
can't fight the water course
need more education
must recognize consequences

more zero till
soil erosion not a major issue
leaching of nutrients a concern

education a priority

strip farming on slopes

not much wind erosion in region

WATER BMPS

livestock management
location, density, access to watercourses, riparian management and planting
cattle benefit from off stream watering
site specific problems and solutions

have producers been polled to determine which BMPs are being used?
there is a lot of information on BMPs

more on-farm composting

riparian pastures

rotational grazing

community water systems
small for stock watering, large for irrigation

grazing practices which maintain healthy vegetation
salt placement, etc.

planning for holistic water mgmt on farm
watershed management planning

large benefits from education and cooperation compared to regulation

EFP process provides education to producers

technical extension efforts

Regional District working on land use planning, guidelines

partnerships
inter agency, inter organizational

riparian zone rehabilitation and restoration

protection of critical habitat
purchase, long term lease - Biodiversity

AIR BMPS

more of an issue in Smithers

air shed planning

burning management
venting index
based on Prince George conditions, conditions may be quite different 100 miles away

can only burn 5 piles at once
better to burn a lot to create better updraft

BIODIVERSITY BMPS

weed problems
- especially along RR, and RR companies won't do anything

efforts on coordinating weed control effort
- have funding constraints
- weeds not just an agriculture problem
- government doesn't accept that there is a weed problem

need more effort on coordination, more funding

easier to keep on top of situation rather than deal with larger infestations later

perception when spraying weeds
- too much opposition when someone applies for permits

pine beetle
- if cut must replant to trees even if in ALR

predator management process
- constraints on trapping/hunting should be relaxed
- public perception that we don't have enough wildlife

cannot use 1089 poison (canine poison)

use high tensile smooth wire electric fencing

sheep farmers tolerate a 2% loss

fire to control tree encroachment, increase biodiversity

financial incentives
- property buyback
- tax breaks for farmers protecting habitat areas

hunting regulations
- could there be changes to reduce "problem" wildlife

access to hunting when there is a problem

new regulations - no hunting on grazing land as well as farm land
controlled access for hunters onto ag land, (have system in Ft. St. John)

how to manage mortalities, especially in winter
McLeod's By Products shut down
trappers may be interested in picking up dead animals

fish screens

better coordination between agencies to solve fish issues
fish issues impacting water management on farms

require the means & knowledge to address the rules (re ditches, screens etc)

loss of grassland, playing catch up now

"Certification" of operation

agriculture community needs some good publicity
better public awareness

Conservation Stewardship Program
tried to put people on the ground in cooperation with farms and the community
provided a good connection between agency and producers of community

EFP reference materials - hope to have published in April

will not just mail out
want people to attend workshop and receive materials then
participation can then be counted

information to 4-H groups?
the up and coming farmers

important that EFP planners are well trained
one week may under estimate the amount of training required
consider initial training and upgrading

Minutes of EFP Workshop - Dawson Creek, B.C.

022-5120/1000

January 30, 2003

ISSUES

SOIL

new cultivation practices introduced over past 10 years
soil erosion not such a problem as before
wind erosion during dry periods
water erosion in spring

streambank erosion

even when there is good riparian function can have significant streambank erosion
depends on the soils

impact of oil industry activities
change drainage patterns – results in soil erosion

soil contamination due to oil activities
can have areas no longer suitable for farming

oil and forestry industries
road construction, results in erosion

recreation activities

oil compaction from ATVs
streambank erosion

ATVs - spread weeds

if registered pesticides used properly should not pollute soils

oil for dust control - used to be a common practice

fuel issues mainly in yard areas - small spills in field, unlikely to be an issue
soil organic matter

some soils naturally low in organic matter

some cropping patterns accentuate the problem
but there are agronomic solutions

feed quality declining (protein and energy
linked to reduced soil fertility

compaction from working wet fields, a management issue

low fertility may result in poorer winter survival

burning straw - not so common now
a poor management practice

no native grasslands

diseases which lay dormant in soils (blackleg)
soil borne pathogens

drainage?
seepage?
organic soils?
don't have much

WATER QUALITY

bacteria from feces, animals
cattle with access to streams
an issue when sources for domestic water
one of the suspected issues is agricultural runoff
not enough sampling to determine which time of year problems occur

livestock or wildlife, there is more wildlife now

all are suspected

any intensive livestock on watercourses?

access to water on grazing leases

no intensive livestock operations upstream of Dawson Creek

some over wintering sites on watercourse

their association working on off stream watering, dugouts
location of salting sites to keep away from streams

Community Pasture
also working on off stream watering

other industries which discharge to watercourses (pulp mills)
with downstream agriculture uses

there is no irrigation from rivers
perhaps some impacts to livestock

intensive hog operations

turbidity from cattle grazing near banks
higher pathogen levels, bank erosion

have been instances of chemical contamination of water impacting livestock

runoff from over wintering sites

field runoff introducing chemicals

have never found a pesticide issue

potential problem only if heavy rain after chemical applied

runoff from manure applications
no dairies left

Hutterite colonies have intensive livestock operations

riparian function

WATER QUANTITY

generally not a problem in this area
- normally get enough rain
- in past couple of years have had problems with dugouts

water conservation

now water past city intake, something happening in watershed

land clearing; agriculture, forestry, oil & gas
municipal use
users making full use of water

quantity impacts quality

coal bed methane
- salt water - what happens to it
- an issue in Peace River Valley

cumulative impacts on tributaries

can oil & gas activities take water out of sources which have low flows?

licencing problems, using trucked water
- not sure of how much and from where
- there are a number of sources (some unnamed) under licence
- need better licencing and better monitoring of actual use

are we going to need meters on wells?

need integrated watershed planning
- cannot ask one user group to do something without asking other groups to be part of the solution

limited groundwater resources in Peace area
- aquifers have not been delineated
- one surficial aquifer – a spring - municipal tank loader

one spring has gravel mining over it

inadequate information on groundwater resource

oil and gas using water injection with potable water, problem in North Peace

City did some groundwater work, some consultant doing groundwater work for?

AIR

Enough wind erosion for dust problems?
sometimes

dust problems when harvesting
issues when burning stubble

burning from land clearing

burning bedding in the spring
burning sour gas

dust from roads more of a problem
most traffic on rural roads related to oil and gas industry

wind erosion not common, normally not enough dry periods

little summer fallow in area

flaring when testing well, can last for several days

GHG from fertilizer (nutrient) applications
an emerging issue

could be an opportunity for carbon sequestration

more burning from logging than land clearing
cheaper to buy land than clear land

odours from gas plants

issues with intensive livestock operations?

not a general problem could be isolated issues
but such operations don't have many neighbours

odour from effluent from Fibreco when spreading on farm land

an issue around Taylor
farmers being approached
attractive, the effluent is high in nutrients, low in contaminants
an alternative to land filling

BIODIVERSITY

ranchers are a specie at risk

big impact on agriculture from wildlife
elk, moose, deer, bear
predators killing livestock
waterfowl damage

some waterfowl issues especially during wet falls

invasive weed species

have had cattle grazing for too long on winter range, impacts ungulates
domestic bison - concern about escape and impact on introduced "native" populations

decreased riparian function, reduced riparian areas

clearing, draining, livestock impacts

loss of wetlands, filling, diversions

most of Ducks Unlimited activity is reclamation rather than creating new wetlands

how significant is cattle access?

a localized issue

more livestock coming into area

but more off stream watering, fencing

farmers need resources to implement changes, better management

some wildlife certainly benefit from ag activities
land acquisition for wildlife

Ducks Unlimited feeder stations in fall have been good - to lure away from fields

agriculture's impacts on wildlife not all negative

Species at Risk?

likely some species, but not likely an ag. issue

weeds?

weeds are a big issue
government does nothing for weed control, no enforcement
need control along roads, fence lines

along forestry and oil and gas roads
problems on the range

when oil and gas companies reseed they don't always use the best seeds

machinery movement transports weeds

forestry companies should look after weeds on their roads even after logging stopped

have questionnaires on environmental issues

on farm fuel and chemical storage

GENERAL

program to be bring environmental farm planning programs together
one planning window, not several different programs

monitoring, measurements will be difficult

Environment Canada working ranchers in ??? Valley and will be monitoring in the watershed

process needs to be more compact

will funding be available for watershed groups?

went through pilot EFP workshop
- BCMAFF staff on farm
- only found minor problems (fuel storage)
- most farmers and ranchers are concerned about environmental issues

funding assistance not a subsidy
- help to benefit everyone
- need to properly justify gov't programs
- society paying for a benefit to society

money available for research?
- water testing?

accelerated depreciation for expenditures in environmental enhancement?
- government has announced this?

another program by Health Canada to look at impact of pathogens from agriculture

agriculture doesn't publicize its success stories

BENEFICIAL MANAGEMENT PRACTICES

SOIL

tillage practices; conservation tillage, zero till, conservation tillage

how much more to do before conversion to better practices complete

30-50% depending on weather, etc
- plus reduction in number of passes (4 rather than 5)
- opportunities for carbon sequestration

currently no programs?

may be program which provides equipment leasing

grassed waterways

shelter belts, potential for a lot more

buffer strips, vegetated buffers, riparian planting

oil and gas activity
- reclamation seismic lines, drilling sites doesn't completely restore
- there should be better BMPs for them

reclamation after industrial activity

crop residue – cropping and grazing management
- leave stubble to trap snow
- incorporate to add organic matter
- part of tillage management

Soil Conservation Council
- demonstrates soil BMPs
- outside of APF programs

perennial forage crops on highly erodible soils
- conversions to more sustainable cropping

had speaker on streambank erosion

education on chemical usage (even though not a problem in area)
more education to the non-agricultural community; herbicides vs. insecticides

only used insecticides two years in past twenty (1998, 2001)
- IPM strategies are available

what about other industries?

if agriculture shows by example other industries may follow

are the other industries aware?

other industries are improving
soil stripping practices, etc.

other industries (oil and gas)
want standards which they could meet or exceed
should ensure agricultural issues are included in standards

other industries have to do their part

WLAP working on BMPs for oil and gas industry
(i.e. use of aircraft in surveys and impact on wildlife)

work with other non agricultural interests on issues

be more proactive - a good BMP

WATER

nutrient management, nutrient applications

grazing management, feeding area management

water in this area is so bad don't want to make it worse

don't have enough water to spoil
controlled access to streams, dugouts, fencing

over next several years will all have watering systems and keep manure out of water

what about powering pumps

nose pumps are getting very efficient
are testing a couple of models which seem to be working in winter conditions

improvements in dugout design and remote watering from dugouts
Not aware of anyone doing remote watering from creeks

are keeping cattle away from creeks

not 50% yet, but the practice is catching on

50% plus on summer pasture need water systems

perhaps 50% ranchers but only 20% of cattle

sedimentation, streambank erosion

riparian areas, wetlands
a better understanding that these are BMPs which improve water quality

some regulations are counterproductive
gas well installed on range and were forced to install bridges
was frozen solid, would have been less damage if drove on ice

should note regulations which are counter productive
i.e. off stream watering licences
instream watering doesn't require a licence but to move off stream can't get a licence because system fully recorded

proper slopes on drainage works
proper channel design (bank slopes, ditch slopes) grassed, stabilized

has never seen a properly designed grassed waterway in Peace region

grazing management, rotational grazing
siting of over wintering sites
when using chemicals apply only under proper conditions (right weather)
sprayer calibration
sprayer tank cleaning practices
new nozzles available - more efficient
chemicals very expensive – provides a motivation to apply properly

nutrients, manure - proper application

not a widespread problem in this area
need fertility plan

water conservation measures

lack of rainfall limits benefit of fertilizers

precision farming?

fields may be too small and too variable to implement this practice

economics of precision farming not in favourable in Peace
land cost not high enough to justify the practice

have too many variables in Peace

quite expensive to get started up

competing uses - integrated watershed planning

pipeline from the Peace River

address legislative constraints

better knowledge of groundwater

baseline information on groundwater

AIR

already have burning regulations

venting index not site specific, is this a problem?

yes

mostly common sense

some fiscal growers feel burning is necessary for disease control
have burning vs. more pesticide use

odours from burning
don't burn on windy days

incorporate to conserve nutrients also helps in odour issues

pulp mill residual
incorporated for odour control

several farmers want access to this material

pulp mill residual odour worse than hog manure

feed additives to reduce odours (pigs, chickens)
can add materials to pit but costly

fertilizer applications and GHG emissions

dust BMPs?

shelter belts

organic matter increases to sequester carbon

awareness that natural environment contributes to good air quality

BIODIVERSITY

Regional District has stackyard fencing program

wildlife fencing may work in other regions wildlife fencing
probably not practical here

elk damage to stored hay has been very bad for past several years

in Kootenays improving other habitat which elk find more attractive

hunting regulations should be reviewed

Regional District has looked at problem wildlife issues (including predators)

will never get permission for 10-80
feeding stations, lure crops - for waterfowl

large populations of some species is not good for biodiversity

need to look at management, more is not better (i.e. too much elk could displace other ungulates)

cannons only get birds to move to another field

has Regional District has provided good leadership, re problem wildlife?

yes

all agencies / interests at the table
developed good tool box of BMPs

local leadership as a BMP

species population baselines (for wildlife)

partnership opportunities for increasing biodiversity

WLAP working on biodiversity strategy
biodiversity = balance

water management (diversions, culverts) impact on fish
proper instream works
fish friendly infrastructure

awareness of natural/native plant species and their use in reclamation

MAFF has new in order weed program (noxious weed program)
weed control must be a long term program

grazing management for elk control
may be some grass species which elk prefer

wetland restoration

land acquisition for wildlife

those acquiring land need to be aware of adjacent agriculture use

if they acquire land which had been in agricultural production retain some production

(may switch from annual to perennial crops) and lease/rent to farmers
many of the properties which were acquired have "Class I wetlands" and did not always eliminate agricultural activities

wildlife corridors

LRMPs, need high level -planning

compensation to neighbours if activities on acquired land impacts neighbours

properties acquired from those who owned adjacent land, paid market price for ag land may have been a form of compensation

agriculture should be recognized for its role in providing habitat
compensation for this role

compensation does not manage wildlife
without management can have on increasing problem as populations increase

compensation to agriculture for their contribution to biodiversity

allow farmers to charge for hunting on their property, incentive for more balanced management

SAR legislation - what species?
need information on what species need so they won't be at risk

RECYCLING

need depots for oil disposal
have program for chemical containers, but could be expanded

don't have the population to justify some BMPs such as recycling opportunities

recent announcement from Minister re private co. being retained for recycling

if opportunities exist, farmers need to know about them

Minutes of EFP Workshop - Kamloops

February 3, 2003

related to food safety, on-farm food safety?

environmental chapter of APF also includes:
NWSEP
green cover program
stewardship – implementation of EFP recommendations

ISSUES

SOIL

predominantly forage - therefore not so many erosion problems
soils often low in organic matter, a function of climate

erosion from clear cuts

plant community deteriorates, reduced OM, reduced infiltration
noxious weeds may have similar impact

an research, surveys?

no systematic surveys (on clear cuts)

riparian issues, animal access - streambank erosion
need to recognize value of riparian areas
soil issues compacting infiltration?

measured infiltration as a function of grazing intensity on clear cuts
very little difference

some soil erosion, is it a problem
some zero till cultivation

diversity in agriculture is increasing - more annual cropping

increasing amount of biosolids applications

biosolids - an increase in O.M.

sees very little erosion on range lands
erosion in watercourses

wetlands- isolated areas - significant disturbance by animals (concentrations of livestock in wetlands)

WATER QUALITY

sensitivity of riparian areas
pesticides - fungicides appl. (not unique to this area)
loss of riparian areas impacts on domestic water

cannot separate uplands from riparian zones
runoff from uplands
nutrients
pathogens

access for watering - impact on quality and quantity
management of livestock around watercourses

groundwater extraction near surface sources

allocation issues
availability in a dry climate, efficiency of use
an issue throughout the region

if stricter on allocation, more groundwater exploitation which could reduce surface flows

stream cover and impacts on water temperature

different needs for different users
should have a better understanding of the needs of others

overlap between NWSEP and this program

one "window" for different programs is the proposed model

allocation and policy issues

where will they be addressed?

off stream watering and allocation issues
some complications with the Water Act

being told that streams are fully recorded

livestock watering one of the biggest issues in the region
the one dairy farm spreads manure at the wrong times

runoff from feedlots?

roads - major contribution to sediment
former logging roads
not stable, not revegetated
especially under unusual runoff events

modification of streams to protect ag land
steambank protection, armouring
farming in flood plains - want to keep stream in one place
resulting changes to the landscape, biodiversity

change in stream channel morphology

over wintering sites a significant issue
more prevalent than feedlot runoff

on farm processing, fresh vegetables, crop washing
is this an issue in this area?

a situation in north Okanagan, wanted to wash vegetables
groundwater too high in Nitrate

not much of an issue generally water quality better than in F.V.
not so many susceptible crops

ginseng industry
public perception a definite concern
what are the actual impacts on water?

fungicides used in ginseng industry are low in toxicity
    applied at low application rates
    need to separate perception from reality

WATER QUANTITY

cannot separate quantity from quality
    issues are interrelated
    don't want a program which doesn't reflect this

livestock on crown range
    water supply big issue
    availability of water is the limiting factor in management of the land base

pressure on riparian areas from wildlife or agriculture?
    fish interests want more water left in streams

change in hydrology from small irrigation dams
    management of these structures a challenge

interrelated users

changes to timing of flows

manage the hydrograph
    what is the impact of climate change?

AIR

odour - a health or nuisance issue
    hard to determine which, but takes a lot of time composting, manure spreading, biosolids
    dust concerns
        cultivation/tillage
        application of very dry poultry manure

smoke from burning
    definitely in Okanagan, primarily orchard prunings

rendering plant in Armstrong

BIODIVERSITY

SAR often related to land which is useful to agriculture
- raptors, amphibians, reptiles
- large overlap between species range and agricultural lands
- specific issues are species dependent

grassland ecosystem major issue
- valuable habitat

large areas of private grasslands
- critical to ranching operations

drainage of wetlands
- managing reservoirs

impacts of wetlands
- not well evaluated
- in some cased may have increased biodiversity
- Ducks Unlimited - impounded wetlands vs non-impounded wetlands
- overall, increasing or decreasing bio-diversity?

interrelationship between domestic sheep and bighorn sheep (disease transfer)
- predators (grizzly, cougars), need management strategy

winter range for ungulates (elk, deer, moose, sheep)

noxious weeds
- particularly on grasslands

monitoring of ecological health
- which direction are we headed in

hope funding helps agriculture deal with SAR, species recovery
- money to help deal with society's goals

hormones
- endocrine disrupting substances
- also related to water quality

pest control in general
do not know what the impacts are

land use planning
good agriculture can have positive impact on biodiversity

impact when grassland areas broken up (subdivided)
when large ranges are subdivided
economic viability of large ranches staying in business

aquatic species
turbidity, streambed structure - barriers to fish movement

wildlife corridors, barriers
encroachment on grassland
role of fire

changing habitats on farms
grassland to intensive cropping due to economics/markets
change in farming practices impacts biodiversity

wildlife damage to ag crops?

will hear about this more in other areas
predators lower key than in some other areas

the loss of grassland habitat is the issue
conversion to other uses which are not as productive (from biodiversity perspective)

native grass vs tame grasses

provincial list of priorities
some issues are cyclical

identify types of issues, don't want to miss issues, want latitude to address all issues.

forest encroachment and ingrowth

lack of native grassseeds for reclamation (native vegetation)

large % grasslands not in good enough shape to contribute what they are to biodiversity & grass production

condition of rangeland/grasslands
- little understanding of economic viability of ranches

farmland worth much more for other uses
- if converted - negative impact on biodiversity
- negative economic drivers
- intensive agriculture can remove biodiversity, but agriculture can also be a benefit biodiversity

if grassland on a ranch can hope for grassland recovery
- if subdivided, less opportunity

farmers are getting older

protection of farm land in face of competing economic opportunities
- transition from historical ownership

FOOD SAFETY / PROGRAM OVERLAP

overlap with food safety program
- off shore demands on quality
- HACCP required
- several levels of government and producers working on issues

other programs looking for funding
- too much duplication?
- farms have gone through Food Safety process
- BC format not being accepted nationally

MAFF has Food Safety Branch

Food Safety Chapter
- food Safety first priority
- then environment and animal welfare

administration of food safety
- who monitors, does on-farm inspections

need 3rd party to be valid
commodity group cannot do this themselves

new money to do something positive go forward
develop a reputation of looking after the world

BENEFICIAL MANAGEMENT PRACTICES

SOIL BMPs

used to seed clearcuts with grass
does this increase erosion

most soil movement associated with machinery areas
road deactivation has not always reduced erosion
need design to handle runoff, reseeding

BMPs in Forest Practices Code - some could be adopted

how will BMPs be used in this scan?

agro forestry practices

riparian areas are integral to fish habitat
Sec 35 of Fisheries Act
what is an effective buffer?

rehabilitate to native vegetation, natural state
need extension materials, technical resources

is there some measure (i.e. stubble height) which indicates maintenance or increase in soil O.M., soil protection
grazing management - what would be measures of good practice

encouragement for agro forestry

buffer doesn't necessary mean exclusion

bioengineering techniques, streambank stabilization

talking about small corridors in extensive ag lands (riparian areas)
what about the remainder of the ag lands

naturally occurring erosion vs man made
meandering streams want to meander

farmers looking for income
are not paid for addressing the interests of others

a package of practices
fencing, stockwatering, weed control, riparian pastures

grazing management plan - one of the EFP modules

soil conservation when extracting gravel, etc

ALC has say when land in ALR

biosolids to improve organic matter

WATER BMPs

are going to need some changes to Water Act
with improved efficiency, farmer would want to use saved water on his land
don't irrigate in Sept., irrigate in Oct. so don't go into winter with dry soil
better timing of extraction

Water Act changes to accommodate off stream watering

point of diversion regulated by Fisheries
BMPs need to be promoted by DFO
preventing fish entering irrigation ditches
intake construction and maintenance

storage reservoirs
have become multiple use facilities
creates issues re operation and maintenance
long term maintenance and cost

storage licences

water to be stored between dates
no provision for fish flows to be maintained during storage period

Water Act to address groundwater withdrawals near streams

well head protection
may have to move the well

well location siting

manure application

need manure storage to allow for appropriate application timing

may be environment reason to change pump (change fuel source, increase efficiency)
change to electric motor no fuel storage next to stream
water conservation efficiency
leaking reservoirs

water leakage may provide environmental benefits

overwintering sites, calving sites
animal husbandry for pathogen control

guidelines for chemical applications (i.e. setbacks)

pesticide module in EFP process
sprayer calibration
IPM
application Rates
choice of chemicals

buffers

choice of application equipment

cleaning of spraying equipment

offstream watering

riparian management

there are several BMPs for riparian management

demonstrate appropriate grazing management
cross reference BMPs factors

riparian BMPs developed by several agencies
other information, publications are referenced

a grazing plan contains several factors, rotational grazing

want general comments, ideas so everything/all possibilities are covered

government developing new guidelines for crown range

EFP must comply with appropriate regulations

who pays for "facilitators"?

watercourse maintenance (policy) guide

want to go province wide for drainage maintenance

these guidelines are needed for the interim

roads

structural stability and revegetation
ditches and cut banks in particular

AIR BMPs

odour BMPs have been tried in F.V.

composting handbook

chipping and recycling wood waste

biosolids are regulated

incorporation
timing of application

buffer between farm & subdivision to reduce dust issues

agricultural activities to capture carbon
improved range conditions
agro forestry
better quality grasses, reduced methane production (outer root structure)

BIODIVERSITY BMPs

grazing management

weed control very big issue
need effective control
biological control
native species
appropriate chemicals

agroforestry/forested areas on ag land
proper understory creates wild life habitat
woodlot management

education on weed control

weeds are not just an agricultural problem

province wide coordinated weed control plan/strategy
this process is underway, but uncertainty about funding, etc.

rapid deterioration of extension services in an increasing complex world
a one shot plan may not be sufficient

plans should be reevaluated regularly

how to determine effectiveness?

get program up and running first
did survey in 1995 of on farm practices

redoing now, then can be repeated in another 5 yrs.
need monitoring programs

there is not enough knowledge

need BMPs for on farm aquatic resources
farmers need understanding of value of these resources

sensitive area management

increased awareness of biodiversity issues
what are the objectives re biodiversity?

land use planning
conservation agreement
estate planning/transition

special habitat/features (habitat trees)

with good management should not have a preditor problem
extension and education needed

problem wildlife

could be an increasing problem, i.e. bears are getting friendlier

feedback loop
resources for research
if a BMP is not working, people need to know

Minutes of EFP Workshop - Summerland

022-5120/1000

February 4, 2003

Boundary, Princeton - which region?

likely don't have to spend $7 x 10 each year, can spread funding over life of agreement
another initiative for implementation of plans

voluntary and confidential
different levels of detail for EFPs

issues appropriate to BC

insurance companies may require EFPs for liability issues

banks may also require EFPs

not voluntary if producer wants funding through programs
no linkage to safety net programs, at least at present (position of producer groups)
producers have accepted linkage to environmental funding

sustainability
record keeping
need financial incentive, or neutral financial impact, to adopt sustainable practices

review plan every 5 years unless major change on farm
voluntary (confidential - to prevent gov't from regulating (prefer push from insurance and banks)

ISSUES:

SOIL

soil erosion, particularly with ground crops

tillage for weed control, sloped land which is prone to erosion

streambank erosion

some roads on erosion lands have erosion problems

water added to benchlands, greater than natural amounts (precipitation)
irrigation induced erosion

wind erosion from dry soils

streambank erosion alluvial plains

soil is the least of the 4 categories
major cropping - vineyards and orchards - permanent cover
vegetables – mulch, drip irrigation
vineyards and orchards - soils exposed only 1 in 15 yrs (when reestablishing)

soils very low in organic matter (OM)
need to build up OM

soil OM bigger issue than erosion

catastrophic erosion events (landslides, gullying)
agricultural activities may accentuate, speed-up

gullying a deglaciation event
agriculture may have role in slides

what is "health" of soils

acidification of soils
cattle impacts as steep slopes - gullying, forestry impacts, sedimentation

study by Environment Canada; pesticides in soils are still high, being picked up by birds

Environment Canada study of pesticide residues in soil
residue levels in Okanagan are some of the highest in North America

is pesticide problem one of historic use or ongoing?

historic, soils are contaminated, where are BMPs to address this issue?

soil OM & air, mulch prunings and return OM to soil

heavy metal contamination from pest control
may be residual (copper, sulphur, arsenic), lead arsenate used to be used as a spray

selenium deficient area, impact on big horn sheep
acidification may play complicating factor

soil compaction, drainage, organic soil subsidence?
no response

WATER

sediment in streams

manure management, nutrients and pathogens
cattle impacts to water on range

high $N0_3$ in groundwater in Osoyoos, Grand Forks - fertilizer source primarily

slugs of NO_3 moving slowly through dry soils, have not reached groundwater yet.
don't use a lot of phosphorus in orchards

poor municipal, domestic waste water treatment a problem

disagrees with above
have highest "coverage" of waste treatment in North America
may still have issues with septic systems

some communities don't take care of their sewage
could potentially impact water sources for ag. use

any industrial sources?

pH of water often greater than 7
potential salinity problems

quantity, allocation?

quantity more important to most people than quality

resurgence in ground cropping
- pesticides from tree fruits into water which then impacts ground crops through irrigation

don't have long term, consistent monitoring of suspect chemicals, expensive to collect

perception of chemical problems in Okanagan

used to be annual sampling of sediments
- has been discontinued

did not find chemicals, if nothing is found it is difficult to justify continued monitoring

some areas with high arsenic, have natural sources

don't have baseline data, therefore difficult to focus EFPs
- water quality, soil quality, sediment quality

abandoned water wells
- what is being done with them, impacts on groundwater quality
- don't know where they are
- have found oil drums in abandoned dug wells

competition for water, will get drier in the future

buffer strips
- need direction from water protection agencies

indicator organisms
- if trout present, have good water quality

riparian areas

soil erosion is a mechanism for pathogens transport

several BMPs available for on farm water conservation, improved efficiency

meeting at Regional District

complained about agriculture using too much water
want water to accommodate future growth
more population, more conflict

low flows, high temp, stranding, impacts on fish a conflict

any study of agricultural impact on water temperature

need regulated system
what is natural flow variation?

don't have inventory of actual water use by licencees
some people don't pay licence fee and government doesn't follow-up

groundwater licencing?

relationship between quantity and quality
freshet is starting earlier
should store more freshet flows, upgrade storages
better reservoir operation

340,000 people at present (excluding Boundary, Similkameen)
2021 - 500,000 expected
increase will not be farmers

what will agricultural water needs be in the future

with drip, more soil erosion, lower OM

if agriculture more efficient, more water for other users?
in the future may need more for agriculture due to warmer temperatures
if agriculture saves water, the extra should be available for agriculture

flow regime impacts by storage, diversions, climate

climate change may extend growing season

regardless of purpose, don't really know what is being used

concerned about use of this list of issues

provision for setbacks, buffers for potential future uses

on farm fuel storage

AIR

smoke from burning an issue?

yes

particles from dust, agriculture not the only source

PM_{10} dust, $PM_{2.5}$ smoke

pesticide drift

more rural residents
monitoring should be done

odour - manure, feedlots

no information on pesticide impacts on air quality

not aware of GHG research regarding tree fruits, vineyards
don't have anaerobic soils
nitrogen fertilizer use low in orchards

carbon credits if O.M. in soil increased
GHG bonus could be a positive

BIODIVERSITY

concentration of SAR in S. Okanagan

some coming back since DDT use stopped

wetland habitat loss vs restoration

south Okanagan is one are most at risk
but also other important areas (in Boundary)

light pollution from urban centres
loss of agricultural land to urban uses is reducing biodiversity

subdivision of large parcels an issue, easier to maintain biodiversity on larger holdings.

crop losses to ungulates

loss to birds
highest number of starlings at Christmas count

alien species (starlings, knapweed), invasive species

weeds

habitat restoration keeps wildlife off agricultural lands
impact of grazing on habitat

forest ingrowth on slopes reduces habitat, wildlife to ag lands
ingress means growth in numbers, density)

soil biodiversity

increase soil OM increases biodiversity

domestic sheep and wild sheep, disease issues

fires, both positive and negative impacts

riparian zone management, riparian health

loss of cold blooded species

in south Okanagan, habitat loss
in other countries 5% of land conserved for habitat

5-7% land reserved for habitat, tree patches
how to give credit to people who set aside land

Okanagan River has been channelized
oxbows as habitat areas

recreation (ie golf courses) displaces habitat

recreation vehicles moving weeds and pests
expect people to bring their own firewood - may introduce more pests

overgrazing helps spread noxious weeds

poor storage, disposal of pesticides - no disposal facilities in Okanagan

fuel storage
animal burial, loss of McLeod's rendering plant

mortality disposal sites attracts predators, impacts wild sheep
occasionally (every 3-4 years) have bear problems in orchard

BMPS

SOIL BMPS

drip irrigation only waters the specific crop, leaves dry areas which are more susceptible to erosion
reduced our OM under dryland conditions

erosion when tilling occurs
have dryland mixes to plant in non-irrigated areas

no tillage
current practice - incorporate O.M. when replanting orchards

experience of grower in Cawston with drip system
native species and weeds - dried out
area planted to dryland mix - stayed green during a very dry summer

managed deficit irrigation in vineyards

mulching prunings for OM
cover crops after harvesting ground crops
permanent cover where required
wind breaks - for ground crops

mulching

mulching with any available organic material, has several benefits

windbreaks to reduce drift (pesticide spray)

shading problems windbreaks

in Ontario when farm plans introduced apple growers were working on own integrated plans, was little coordination
industry would be interested in getting credit for what they are doing

replant programs
have environmental benefits
new irrigation systems, different spraying equipment
have "Growing with Care" program, have already done a significant amount of the work

new weather stations (Farm west) will allow better irrigation

have ditches where farmers cultivate right to edge causing erosion
bank stabilization will prevent loss of land

composting (differentiate between mulch & compost)

surface application of organic matter (preferably composted material) for OM addition

replanted orchards, 75% less chemical applications

SIR - sterile insect release program

organo-phosphates reduced from 55,000 kg to 5,000 kg in 2 yrs

have advanced practices in many areas
already meet many of the "standards"

only part way in, not all high density orchards
are programs which they want to keep going (SIR and high density planting)

how will money be allocated?

will not say no to an application which includes something which is not on regional priority list

crop rotation

soil fumigants are the worst chemicals but there are no alternative

education extension, technology transfer, research organic farming practices

soil tests (ph), plant tissue analysis
targeted nutrients application
lime applications if required

avoid ammonia based fertilizers to reduce acidification

integrated approach to bank stabilization
integrated with creation of fish habitat

WATER BMPS

see soil BMPs

buffering from upland activities

water management technologies; scheduling, system, mulching

sprayer technology (to reduce drift)
type of equipment, operating procedures
for both nutrients & pesticides

nutrient management; amounts, timing

fertigation cannot target fertilizer applications

monitoring water quality (baseline, ongoing)

manure & compost storage

off stream watering for livestock, controlled access

restoration of riparian areas

in south Okanagon, valley bottom too wet for tree fruits but hobby farm problems

hobby farm problems in Kelowna

and Summerland
well head protection

monitoring
need to measure to see if progress is being made
likely beyond the means of an individual farmer

pesticide and fuel management (contaminant management)

storage of freshet flows

inventories of water uses and balances
determine how much agriculture uses

AAFC worked on BMPs for tree fruit industry

water conservation is one of highest priorities

efficient use of water, scheduling

mulching to improve water quantity

what about BMPs in other regions?

education, extension, research regarding quantity of water

water governance, policy, (licencing, security)

land use planning, urban encroachment

rural residents in agricultural areas

water use planning at landscape level, Douglas PUD

clean out and clean up storages
in Kelowna 5 irrigation districts, 4 supply both irrigation and domestic

AIR BMPS

mulch prunings

chipping

stumps
difficult to chip, charged by the ton at land fill, don't want to burn
some put under piers for fish habitat

dust?

better cover cropping

see soil BMPs

spring rather than fall tillage

only renovate what you are going to crop replant (don't leave fallow areas)

pesticide drift - buffers, windbreaks

sprayer technology, calibration, operator training

identify sensitive areas and then buffer

odours
manure management
location and timing of applications
limiting livestock density

siting, zoning, land use planning

O.M. increases for carbon sequestration

do orchards represent a gain or loss re GHG?

BIODIVERSITY BMPS

habitat set aside

tax incentives

partnerships for habitat

"credits" for creating, setting aside habitat

assessment and identification of indicator species (inventories of species)

research on links between habitat & different farming systems
individual on farm inventories of habitat, value assessment, what should be preserved

tax benefits for growers who meet certain criteria

more inventory data, Naramata and south, than anywhere else in Canada
have a Habitat Atlas
this information should be put to use

on farm inventories need to be put in a regional perspective (ie need corridors)

landscape plans - water, biodiversity, weeds

IPM

alternative crops
diversity of crops creates more biodiversity

60 recovery teams in Okanagan for SAR
they may recommend BMPs

plants as hosts for beneficial insects

roses in vineyards or orchards
alternate hosts for pests
farmer needs access to information

Land Conservancy (Nature Conservancy)?
will visit farm and inventory plant species

need someone from own organization/industry

Conservation Information Centre in Victoria

use of fencing so wildlife doesn't develop tests for crops
sometimes a negative impact

but then concentrates wildlife on unfenced areas
some vineyards open gates at certain times when vines won't be damaged

noxious weed control program

need inventory to design a control program

have "weed alert" program to monitor new weeds

wild apple (fruit) trees provide a host for pests

disease transfer - sheep
brochure being developed which will outline BMPs

protect wetlands

IPM, SIR enhance biodiversity
need research and encouragement

protect wetlands and riparian areas

habitat enhancement, creation

predator bird habitat to control pest birds

soil quality enhancement

Minutes of EFP Workshop - Nanaimo

022-5120/1000

February 6, 2003

7 million/yr = federal + provincial funding
total for EFP plus implementation likely > $35 million over 5 yrs

don't have "make sure producers make a profit" on list of objectives

what about other issues (forestry, etc)

EFP in Ontario?

all provinces will be working on EFPs
B.C. has borrowed, hopefully, the best from other jurisdictions

farmers being asked to pay for environmental sustainability with no consideration to profitability (in Ontario)

two of the pillars in B.C. - voluntary & confidential

but banks and insurance companies will want to see plans

confidential from government perspective

BCAC and industry groups will operate the program

Canadian Federation of Agriculture taking strong position for farmer led process

industry taking a strong position for industry led process

in Chile regions are being certified, could be of benefit in promoting products from a region

comment about EU policy regarding produce; consumer pressure for "certification"

ISSUES

SOIL

sloping land, need cover during writer
geese are a problem - eating up grass

geese (and swans and ducks) pull out vegetation on organic soils then get soil erosion from flowing water

15 acres of peat stripped bare by ducks

streambank erosion?
yes

other practices - forestry

DFO regulations seem to say fields should be free to wash away
they restrict stabilization efforts

over zealous protection with setbacks preclude riparian management

municipal regulations and bylaws are worse than Fish Protection Act

hodge podge of regulations

environmental atlas prepared (from air photos)
now has unknown fish habitat in centre of field
will remove, being forced into unnecessary expenditures

DFO more concerned about small streams rather than big issues such as fish farms

loss of agricultural land due to setbacks, bylaws, definition of fish habitat

encroachment of urban land use into rural areas
urban people don't understand septic systems but complain about manure spreading

"gentrification" of rural properties

difficult to get cover crop established without irrigation
changes in weather patterns

nutrient management and additions of organic matter
organic material not available in areas with decreasing animal numbers

vegetable production in Saanich, where does OM come from?

manure application

may have too much manure on some farms, but in total lots of land

have excess chicken manure in Fraser Valley
neighbour trucking in chicken manure from Fraser Valley
$700 per load on chip truck

tillage impacts, compaction in particular, skill required in tillage practices
timing relative to rainfall, soil structure degration
compaction one of the major issues

more mono cropping, no crop rotation
negative impacts on soil health

"industrial" livestock operations
soil dumping ground for manure
more of a Fraser Valley issue

drainage
organic soil subsidence an issue?

yes

key pockets of organics in Saanich
definite evidence of subsidence

if dry an organic soil - soil shrinks, when rewetted won't go back to previous volume
control of water levels in adjacent lakes an issue

WATER

where do we discuss fish farms

this program will not spend on fisheries issues

land based fish farms
- perception that agriculture is being impacted
- BCMAFF = agriculture + fish

biodigestion of fish waste materials
- land based fish culture and agriculture a beneficial mix
- aquaponics

subdivision with no common septic nor water systems, 50-60 ac
- will get groundwater contamination and farmers will be blamed

sediment from soil erosion impacts shellfish

no incentives to use better pesticides

minor use pesticide program being developed

urban use of pesticides (much greater than in agriculture)
- poor water quality coming onto his farm

CBC Series, 3 companies own the water rights in 100 countries
- Hamilton has had problems since going private
- privatization of water supply

ongoing operation of septic fields not monitored
horse owners do not have manure management, they are hobby farmers

do not have good information on aquifer recharge areas

clear cuts impact recharge

carrying capacity of the land; animal densities, ecological footprint
- over grazing results in soil erosion, nutrients excess

urban development changes runoff patterns, leads to drainage problems, flooding

poor road maintenance practices causes sedimentation which introduces phosphorus to lakes
urban development uses up water, farmers cannot get licences, but water req'd. for farmers to be sustainable

manure storage

manure storage program
needed to own farm before 1998
BCMAFF Abbotsford told him he should have known about storage needs when he bought the farm

water licences for off stream watering
in Alberta - if historic use of streams, can divert water for stock watering

carcass disposal, need alternatives

no spread (manure) period on island - voluntary
zeolite can be added to manure pits, slow release effect on nutrients

non agricultural impacts on water quality - birds

coliforms onto farm often higher than going off farm

horse operators

low temperature, low dissolved oxygen

national water supply planning for agriculture needed on greater than single farm basis
regional planning process does not include agriculture

loss of groundwater due to urban development

farmers don't have ability to control water levels
has a beaver who helps keep water and fish in the stream
seasonal dams

inability to capture water during high flows

no incentive to store water, no tax breaks (dam depreciation rate low)
storage can be done off stream
both environment and agriculture lose with less storage
storage sites often impact more than one property, no incentive for non-benefiting owner

ditch maintenance issues

DFO regulations very restrictive
outflow from a well has been marked as a fisheries stream

allocation issues - difficulty in obtaining licences

habitat mapping doesn't recognize agriculture

changes in upland hydrology (forestry, etc.) flow regime impacts both quality and quantity
winter flooding, summer drought

runoff from construction sites, need bylaws for developers
church construction site created very significant sediment loading

natural pond filtration, wetlands to improve water quality

John Todd in England does a lot of work on wetlands

nutrient input on intensive livestock operations (dairy, poultry) not as extensive a problem as in Fraser Valley but it does exist

priority of uses in Water Act

AIR

smoke a problem?

yes

should get permits when pile dry

24 limit on smoke from a pile

fined for burning, not a good "venting" day, but smoke went up
rules are not applied fairly (forestry companies are allowed to burn, residential sites can burn)

little independent work on odour reducing materials
some complaints on island re manure odours

any good method of measuring odour?

where does research fit in?

look at research needs under solutions (BMPs)
EFP funding will not fund research, but no problem in identifying research needs

composting on farm
some odour problems but talk to neighbours and try to be responsible (do not mix, turn on weekends etc)

lack of information on pesticide impacts on bees

municipalities, regional districts bringing in odour bylaws
onerous on farmers
composting off farm wastes, composting for use on other farms - not protected by FPPA

need provincial standards

FPPA doesn't cover composting non-farm wastes

local governments cannot deny but can regulate
fish processing waste is not an agricultural waste

GHG - organic matter, manure storage

generally have cross jurisdictional confusion

noise

BIODIVERSITY

majority of island is wildlife habitat
agriculture only occupies small percentage of land base

can create diversity on a farm
cultural (cropping) biodiversity on a farm has benefits to farmer (beneficial insects, etc)

tax/monetary incentives for habitat/biodiversity rather than cheap food policy

conservation rewards

compensation for wildlife damage

lots of habitat on his farm, elk, deer, birds, predators

7 geese = 1 cow

costs of fencing, etc.

birds eat blueberries

feral Dogs, urban dogs

investment of time to learn to deal with situation
learn about interests of others
access to, availability of information

BCMAFF doesn't have extension service

BC Assessment - split classification
if not actively farming portion of property, lose agricultural classification

told he should have cattle in bush to maintain agricultural classification
could have negative impact on biodiversity

inappropriate pesticide use impacts on bees, natural pollinators

urban / rural / agriculture land use buffers

tax implications for creating buffers

cut block grazing by sheep limited due to disease transmission issue
expensive veterinarian checks, these could be could subsidized
grazing would reduce pesticide use

over commitment of water depletes water resources with negative impacts on habitat
residential use too high

what about continuity when cannot build house on farm for children
need transition for agricultural land holdings

need federal government to look at importance of farming rather than persue cheap food policy

use a lot of energy on farms
incentives for alternative energy sources

genetic drift an issue for organic growers

noxious weeds?

definitely

have invading weeds

provincial government does nothing

estuaries critical biodiversity function on island
relationship to agriculture not great
may be come cattle grazing

acquisition of agricultural lands in the estuaries
loss of agricultural lands

conflict over riparian function - what is appropriate width

economic impact on farms due to all these issues

in other countries considerable assistance to farmers to help maintain bio-diversity

GMO, what about GMO products in materials (ie manure) onto farms
can this material go onto organic farms
some organic certification processes say no

land acquisition for poplar farms

farmer gets no help for sustainable forestry, woodlots
forest companies get breaks for agro forestry

farmers responsible to several agencies at all levels of government

environmentalists need to remember they have to eat

BENEFICIAL MANAGEMENT PRACTICES

SOIL BMPs

first edition of EFP working documents early time
March 11 or 13 workshops with non BCAC groups to look at EFP process materials

can get permits to scare or kill waterfowl
needs permit from RCMP as well (in no firearms area)
Canadian Wildlife Scare Kill Permit

netting for bird control

contour farming, strip farming

cover crops

minimum tillage, curtain drains (at top of slope)
grassed waterways
plantings on streambanks

access needed for ditching and drainage

trapping wildlife, deer fencing

can control beavers to farms benefit

communication and education, not regulation

better urban/ag buffers
land use planning
100 acres into 10 acres then into smaller parcels
not just 50' width of trees

pervious pavement, etc (land development practices to better control runoff, improve infiltration)

also at greenhouse and other intensive ag operations

organic growing practices in greenhouses

commodification of organics in hothouses
reduces runoff of deleterious materials

IPM

composting for organic matter amendments

appropriate biosolids/residuals application

redistribution of manure to areas without much manure

zeolite, a product natural to B.C.

potassium issues - if apply for nitrogen balance, can get a potassium problem

nitrates not a big problem on island
are fixed quite quickly, Shabtai Brittman has done research

manure mgmt, timing, rates, methods

nutrient management

subsoiling, timing, tillage activities
integrated approach to farming, crop rotation etc
inoculates to enhance soils
water management to reduce organic soil subsidence

soil amendments

research needed to evaluate effectiveness of some amendments

education and extension

tax incentive for appropriate equipment (or funding assistance)
accelerated depreciation can be effective

rotational grazing

do not exceed carrying capacity

small rock weirs encouraged by DFO (don't like rock walls)
bank stabilization (structures, bioengineering)

hedgerows along streams, stops nutrients

but could shade crops

WATER BMPs

Ministry of Health needs to do their job

cover crops, grassed waterways

timely municipal ditch digging

sediment traps

tailwater recovery ponds

dense hybrid poplar hedgerows - no nitrogen reaches stream
vegetation buffer
hedge rows on south side for shade

stream side fencing

hard crossings (vehicle, cattle crossing, access)
off stream watering

drainage

IMP

responsible pesticide application

increased water storage capacity

funding for storage

manure storage

municipal water supply for agriculture

but rates must be farm rates

volatility in stream flows (variability), off stream storage
water management control
many streams on east side of island not good fish streams due to low flows in summer

septic tanks/fields - proper design, installation, operation on farm issue as well

conservation of water

farmer input into regional district water regulations, stormwater management

farmer input into stream classification
setbacks - scientifically defensible

understand wellhead capture zones/wellhead protection

mortality disposal
have lost incinerators on island
some carcasses should not be composted

rendering plants, don't they accept mortalities?

a lot are trucked out, getting expensive

stream planting, debris, turbulence to increase DO

a problem with withdrawal of fisheries funding which helped farmers as well
should continue integrated enhancement programs

District Agrologists should be able to visit farms

covering manure piles, compost piles

good land management in groundwater recharge areas

Timber West upstream
do good job of not impacting runoff

Malaspina College used to have forester who did extension work for farmers with woodlots

education for hobby farmers

AIR BMPS

only burn land clearing debris when dry (burning management and timing)

fans are available

burn prunings, chipping too expensive

stump grinders are expensive

zeolite takes out odours
manure additives, handling practices

cover land clearing piles until good day for burning

educate non-farm public, educate the realtors

proper handling of compost materials

review of permitting processes

need to see what GHG targets become
methane from manure

but agriculture can sequester carbon by increasing soil organic matter

agriculture needs credit for its positive contribution

no till on prairies - can sequester carbon on a scale which is marketable

proper mix of materials to compost (C:N ratio)

local food production to reauce pollution from transporting food

reduce sulfur in fuel (can use Canola oil)
Canadian standards not as strict as U.S. re sulfur in diesel fuel

small scale power generation on farms

BIODIVERSITY BMPs

awareness of the variety of food produced on island
thereby providing a variety of habitats

funding or tax incentives for protection, enhancement of habitat

what about those farmers who lead the way

compensation for providing habitat for the Queen's wildlife

vacant land, what does it provide?

need management or create biodiversity

vacant land with dog feces a problem

perceives biodiversity as a negative for agriculture (wildlife damage etc)
what are the positives of biodiversity to agriculture

diverse agricultural systems, biodiversity is created and benefits agricultural production
Amish agriculture systems work

any research on the benefits to biodiversity that agriculture creates

game population has increased because of agriculture

more deer doesn't necessarily = biodiversity

fencing, netting

scare tactics, etc, birds go to neighbours fields
need to address as a regional issue

hunting

turn wildlife into a "cash crop"

BC Assessment has split classification for agriculture, but won't do split classification on his gravel pit property, all taxed as industrial
split classification only if it increases taxes

could raise taxes to eliminate farmers

should only be able to reclassify farm land with ALC approval

partnerships

more proactive nature groups appreciate agriculture and the benefits agriculture can provide
they see agriculture as a partner in biodiversity

farmland trusts

buffers

land use planning

need a continuum on the farm (more than one generation) to provide stewardship of the land

reduction in energy use

need support for Provincial Noxious Weed Program
overlapping jurisdictions/regulations

need a Ministry which is an advocate for agriculture

should only have to answer to one body
single regulatory body for agriculture

Minutes of EFP Workshop - Cranbrook, B.C.

022-5120/1000
February10, 2003

what will the $7 million/yr be spent on?

cost sharing?

for planning, 100% paid by government

does program include hobby farms

would like to include everyone with agricultural land status

ISSUES

SOIL

high spring runoff causing stream bank erosion

along with back country activities have increased turbidity

dirt bike activities cause erosion

concerned about back country activity comments

majority back country issues not agricultural people

road building standards have improved

once a user creates a crossing, other users tend to use the same crossing (the easiest crossing point) which can become a major source of erosion

flow regime changes?

yes

invasion of noxious weeds, tap rooted rather than fibrous, compete with plants which have better soil holding capabilities, therefore more soil erosion

soils inherently low in organic matter; function of precipitation and natural fertility
- grasses and forbes increase organic matter
- forest in growth reduces grass growth
- 100,000's acres in trench impacted by forest ingrowth

soil compaction from vehicles and equipment and livestock

drought having devastating impact on roads and trails (access)

timothy seed good for soil, fewer pesticides used
- but a crop that needs to be burned causing impact on air

some soils very unstable when disturbed
- east side Invermere, sinkhole activities
- agricultural and interface lands
- lacustrine soils with bicarbonates

drainage and seepage are issues on Creston Flats

soil movement; stripping for gravel pits, ditch construction (soil handling procedures)

WATER

noxious weeds impact infiltration and water holding capacity
- leads to unhealthy stream banks

restriction on herbicide uses

turbidity

conflicts with urban user
- more demand on groundwater due to concerns about surface water quality
- issues about protection of trench aquifers, in particular nitrates
- "urbanization" of rural areas
- community / rural watersheds
  - increased turbidity out of community watersheds
  - with increased turbidity, increased enteric/gastric diseases

properly functioning riparian zones
- relationship between riparian health and stream health
- positive impacts are numerous

better habitat, better water quality, reduced erosion
noxious weeds invade disturbed areas

spring runoff carrying manure and nutrients

water systems shared by domestic and irrigation users
treatment costs to accommodate domestic users

increased urban/recreational demands on water

golf courses, lawns and gardens

water conservation

reuse of waste water for irrigation
water for washing produce

there is increasing pressure to apply biosolids to agricultural land

Columbia River Treaty
now don't have the right to manage that water, rights were given up

dramatic increase in number of waterfowl, wild turkeys

lack of recognition of the value of water, the cost of providing water

climate change impacts on water
earlier spring runoff, lower summer flows (at lower elevations?)
more severe storm events

availability of water

flood control issues in some areas are not adequate

public awareness of ag. issues/rights

conflicting legislation part of problem

Columbia River dams - loss of ag. lands (large scale)
loss of ag. lands to other land uses

Columbia River losses of ag land wire never mitigated

irrigation practices washing nutrients and pathogens into water sources
both surface water and groundwater
nitrates and pesticides an issue in Grand Forks
soils are very porous, over irrigated

don't really have intensive livestock operations

except dairy operations in Creston Valley
spring runoff from feeding sites

did monitoring work in Creston area, found nothing (looked just at water)

agriculture doesn't use many pesticides, more use in urban areas
probably not appreciated by public

urban use of pesticides 10 times the use in agriculture and on RoWs

pesticides more likely to be found in sediments

U.S. has better availability of pesticides

AIR

stubble burning in Creston area, much more occurs just across the border in U.S.

orchard pruning burning a local problem, but stubble burning more widespread

burning of slash a problem

more across the border, they don't have burning windows

if burning of land clearing debris done right no problems
for people with know how don't need restrictions
poor land clearing practices led to regulations

GHG/methane an issue?

wood stoves in urban areas, an increasing problem

will be going to council about wood stoves

inversions in mountain valleys
- air quality becomes a health concern
- have started a program in Golden, a susceptible location

has been a lot of finger pointing about air issues

dust and sand from reservoirs when drawn down

industrial pollution
- impact on livestock

heavy metals, sulfides from abandoned mines

lots of old tailings piles which have been forgotten

increase in population will add to the problems

BIODIVERSITY

valley bottom ecosystems
- everyone competing for same land base
- grasslands are an endangered ecosystem
- ag. activities have altered these ecosystems

in fill of forests (encroachment) is threatening plants

encroachment reduces forage base for both ag and wildlife

continue to lose high capability ag land to other uses
- pushes ag. onto other lands, then more conflict with wildlife

costs of production are high, societal induced
- pressure on ag families to stay in business
- causes pressure to sell land at highest price
- public needs to understand the benefits ag provides (both to the environment and to a stable economy)
- ranches often made up of several titles, easy to subdivide
- at some point the industry will be lost

fewer ranchers means fewer advocates for the landscape

awareness of agriculture

ungulates

wildlife groups buy ag. land, pay more than someone can afford to get into farming

high cost of ungulate damage

value of riparian ecosystems

predators, coyotes, wolves, bears, cougars, feral dogs in this area

eagles, ravens

major flyway for crows and ravens
West Nile virus will be an issue with horses

bird problems in orchards, waterfowl damage

lost an entire crop to grasshoppers
noxious weeds

pine beetle

noxious weeds on marginal lands, industrial lands
impact biodiversity
ag lands are some of the cleanest

agriculture is dependent on crown land base
concern that funding is restricted to private land

limits to private land a major issue

increasing recreation use will accentuate issues

white sturgeon in Columbia

ag activities and nutrients increasing bass population

SERA impact on ag. land values

don't want habitat (SERA) since it causes problems for producers

game farming, introduction of non indigenous species, not in these areas

restrictions on game farming in south half of province

grasslands most endangered ecosystem in North America

considerable amount of grassland owned by "non-ag" people
need grassland stewardship

antibiotics and hormones

not an issue in this end of the valley

potential conflicts with fish

conflict (potential) with riparian areas

fire suppression in a fire maintained ecosystem

drinking water Protection Act could impact agricultural activities

conflicts between ag. (cattle) and water quality
but minor in this area and not properly understood
a post Walkerton perception of reality

pharmaceuticals and personal care products
pulp mill effluents, waste water, ag. runoff
endocrine disrupting compounds
studying these in infancy
people are afraid
a gap in knowledge

when investigated cattle are not a problem
need to highlight true problem areas

need good information to public

cannot forget wildlife impacts on water quality
awareness is critical

not enough education even in government

part of that problem is the politics

BENEFICIAL MANAGEMENT PRACTICES

description of EFP Workbook and Reference Guide

why confidential?, is financial information disclosed

learning curves, level of trust, not big brother

is certification being considered, ISO standards?

certification is being driven by the market (in cherry industry)

when funding is sought, may be some transparency required

ISO certification and independent audits
markets may make process go faster

description of proposed model for funding, etc.

if do workbook and decide to do nothing, any penalty?

discussion of Partnership Committee, encourage that issues be taken through this committee

has heard nothing about the Partnership Committee

SOIL BMPS

rehabilitation of Sand Creek
stabilized stream banks and created fish habitat
off stream watering
cattle excluded from riparian areas with fences

limited livestock access
gravel where cattle have access to watercourse
crusher screen under the gravel works well

riparian vegetation setback from stream bank - don't farm right to edge of bank

partnership opportunities

riparian pastures rather than exclusion fencing

more area in a riparian pasture than would be outside exclusion fencing

have roads, trails which follow stream bed (in the creek)
difficult to rehabilitate, also channelized streams
should have funding to rehabilitate

better awareness of damage done by certain backwoods activities
Producers also need better awareness of some issues

road closures, restricted access
4 x 4s cause long lasting damage

off road activity introduce noxious weeds

land stewardship is required

government needs to give higher priority to weed program

weeds have historically been considered an ag. problem, but impacts soil erosion, biodiversity, etc.

ATV licencing, could provide funding for rehabilitation

wetlands, marshes often considered to have little value
important in water control (source, attenuation)

more cattle, more organic matter

tree ingrowth, these crown land in the "working forest"

regulations in forestry don't help grassland management
forced to replant trees

some acres should not be part of the "working forest", should not be forests

change forest practices
thin, log, burn, grazing

next fire will be hot

don't have regulations which mimic "fire ecosystem"

change strategy to "fire proofing the trench"

fire proof the trench through ecosystem restoration

minimum till not a big item, mostly perennial forage/legumes

more research on suitability of biosolids

more research on grazing mgmt on private lands rather than emphasis on growing winter feed
purchase winter feed from elsewhere

increasing amount of mechanized recreation

make drains in fall (small ditches), filled in during spring cultivation
is this a sustainable practice

soil and vegetation removed and taken elsewhere
can provide adequate maintenance without so much soil removal
soil moved, spreads weeds

weeds in gravel pits
delay in reclamation a problem

ranches don't have the opportunity to grow
cannot get more grazing permits

always seen to have something taken away

viability is key, what is required to keep people on the land and manage it

without stable and viable agriculture it is difficult to worry about sustainability
reward agriculture for providing benefits other than food products
agriculture can provide much more than just food

higher cost for elk tags with portion back to ranchers

program in mid west
money mostly went back to agriculture
help keep young people on the farm

much of land use planning is hit and miss, shortage of funds?
don't see bigger thinking
lack of agriculture focus

community pastures with proper management

and maximize production on those pastures
if ranches fragment will be very difficult to manage grasslands

WATER BMPS

need noxious weed control

if don't do something this year re weeds will lose benefits of past work

need to consider methods of weed control

consider all methods

need to look at practices that lead to weed problems
maintenance and restoration of riparian areas

erosion and sediment control, several BMPs are available

early spring runoff from over wintering areas
what are ranchers doing?
site selection, drainage

berming

need site specific help to solve this problem

often restricted to land base close to streams
more access to crown land could be a benefit by providing a much better over wintering site

landscape level land use planning to prevent land use conflicts, more residences in ag. areas, etc
concerned about nitrates in groundwater at Grand Forks (only source of water)
needs everyone involved, takes time

is stormwater management in urban areas a problem?

is a problem in isolated areas

new rural residents don't understand and don't want to tolerate ag. practices

then end up thinking they own the water

they don't know what a domestic water licence allows

seasonal feeding areas major issue, site specific solutions

grazing management also important
overall livestock management

riparian areas
private and crown land components
another major issue which needs continuing attention
importance of crown land is not well understood by many people
education on how riparian areas function, what is proper mix of vegetation, etc
Min. of Forests manage crown range - they need to understand riparian function

many do not know what a healthy riparian area looks like

water consideration?

yes, conservation and improved efficiency

again education is needed

several over-licenced streams
Joseph Creek; water removed, waste water used for irrigation, no water returned to creek
upgraded treatment and return water to water courses

metering, definitely required in urban areas

Libby Dam issues have not been addressed in BC
in U.S. got millions in compensation

provide water from reservoir for ag use

irrigation management (scheduling, etc)

not many abandoned mines in E. Kootenay which are acid producing
Moyie R. - cadmium

old mines, water being used
mine may be reactivated and people may lose their access to water
Drinking Water Protection Act - without it we are losing out on protecting drinking water; without protection water quality for ag. will deteriorate

licencing of watering on range land, licences attached to range tenure

are being stonewalled by government
off stream watering on both crown and private land

AIR BMPS

problems often associated with inversions
good weather forecasting helps

narrow window for controlling in growth
could something be done for health compromised people so windows could be extended

public education for prescribed burning

revegetation in reservoirs for reducing dust
operators should be responsible

but what vegetation would be appropriate?

more gov't control over siting of industrial activities

BIODIVERSITY BMPS

improve viability of livestock operations
    society to pay for stewardship activities by farmers
    NGO partnerships

forest ingrowth and noxious weeds biggest problems for ecosystem

grassland restoration
    thinning, burning, clearing, logging

clearing and seeding

restoration with native species vs seeding with agronomic species (seeding with ag. species would be at a smaller scale)

more birds leads to more disease concerns
    can have an overpopulation of birds

need a landscape vision
    wide understanding of goals and objectives
    has been done in Fraser Delta
carrying capacity is a key issue for all species and activities

need sociological as well as ecological values/limits
    economic damage by wildlife

fencing of hay storage, majority have been fenced, funding for maintenance?

in Alberta, found that when set aside areas for waterfowl and allowed it to grow up, now less utilization than when area was grazed down.

emphasize the need for funding being made available for use on crown